The Journal

of the

Louisiana State Medical Society

$4.00 Per Annum, 35c Per Copy
Vol. 112, No. 4

APRIL, 1960

Published Monthly
1430 Tulane Avenue, New Orleans 12, La.

Roentgen Manifestations of Collagen Diseases*

• The author lists the collagen diseases and their various physiological manifestations, together with the roentgen signs that aid in diagnosis.

CHARLES M. NICE, JR., M. D.†
New Orleans

IT is a signal honor and a pleasure to deliver the sixth annual Menville Lecture. For many years Dr. Menville was recognized as a leader in radiology not only in the South but also throughout the United States. His memory serves as a challenge for us to emulate his example in striving to improve the teaching and practice of radiology. In this way we not only improve the contribution of radiology to the field of medicine but also we find further opportunity to serve our fellow man.

Introduction

Klemperer [21] coined the name of "collagen disease" as a generic term for a group of diseases of obscure origin characterized by a systemic alteration of the extracellular components of connective tissue. The common histologic attribute is the accumulation of fibrinoid,[22] a homogeneous, eosinophilic refractile material which has some of the tinctorial properties of fibrin.

Polyarteritis nodosa, disseminated lupus erythematosus, scleroderma, dermatomyositis, rheumatic fever, and rheumatoid arthritis [11, 14] are usually considered collagen diseases. It may be argued that the usual case of rheumatoid arthritis is not a generalized disease but affects primarily the joints. Also the clinical and roentgenologic signs of rheumatoid arthritis are seen as a part of the total picture of the generalized diseases.

Many other conditions [13, 35, 39] have been included in this group by various writers. Schoenlein's purpura, thrombotic thrombocytopenic purpura, erythema nodosum, some cases of glomerulonephritis, serum sickness, transfusion reactions, thromboangiitis obliterans and ulcerative colitis have been listed as collagen diseases.

Wegener's granulomatosis [40] is a syndrome characterized by sinusitis, necrotizing granuloma of the upper and lower portions of the respiratory tract, renal insufficiency, arthralgia, and diffuse vasculitis with circumscribed and occasionally cavitating pulmonary parenchymal lesion which may resemble metastatic

* Presented as the Sixth Annual Menville Lecture at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, May 5, 1959, in New Orleans.

† From the Department of Medicine, Division of Radiology, Tulane University and the Department of Diagnostic Radiology of Charity Hospital, New Orleans.

disease. This may be a renal-respiratory subtype of polyarteritis nodosa.

"Spectrum" of Collagen Diseases

There are many patients who seem to have only a few of the characteristics of a given collagen disease [30, 31] or in which the changes may be limited to certain portions of the body. The usual case of systemic lupus erythematosus, polyarteritis nodosa, scleroderma, dermatomyositis and rheumatic fever shows involvement of small blood vessels throughout the body. Yet we see polyarteritis of the abdominal vessels only in some patients who have had a resection of a coarction of the aorta. Another patient with multiple small nodules in both lungs had a pulmonary biopsy which showed polyarteritis; this patient had no renal involvement or any other of the usual systemic changes at the time of pulmonary biopsy (Figure 1).

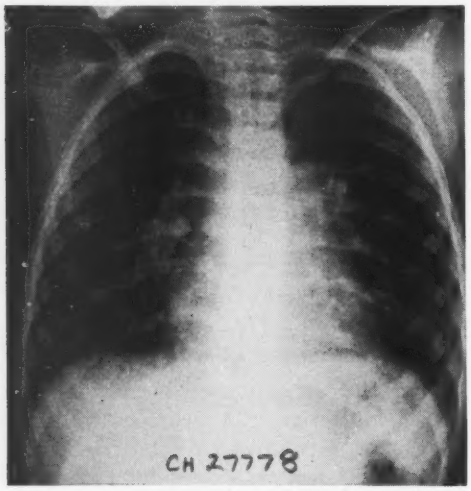

Figure 1. Polyarteritis. Multiple small pulmonary nodules. Hilar vessels and nodes prominent.

Some patients with granulomas and angiitis do not present all of the characteristics of Wegener's granulomatosis. A few will show the facial and upper respiratory lesions without pulmonary and renal changes. Churg and Strauss [7] also described a related but slightly different type of granulomatosis. These patients had clinical stigmata of allergy. The vascular lesions showed eosinophils in and around the blood vessels and the granulomas showed a peculiar palisade arrangement of epitheloid cells about a central necrotic core.

Another indication of the somewhat vague borderlines in these diseases was shown in an autopsied patient who had changes of polyarteritis in the chest and vascular lesions of lupus erythematosus in the kidneys and other abdominel organs.

Clinical and Pathological Considerations

The etiology, clinical, laboratory, electrocardiographic and pathologic findings in collagen diseases have been covered in previous publications.[8, 30, 31, 34, 35]

Although the etiology remains unknown the rather frequent anamnestic finding of previous food allergy, asthma, urticaria, blood transfusions, and drug administration indicates that hypersensitivity may play a role.[3, 7, 10, 33]

Usually multiple systems are involved. They include most frequently the skin, respiratory, cardiovascular, urinary and gastrointestinal systems. The onset in each condition may be variable. Clinical and laboratory findings may be similar.

Secondary anemia, reversal of the albumin-globulin levels in plasma, elevated erythrocyte sedimentation rate and various electrocardiographic abnormalities are common in all of these conditions.

Leukocytosis is common in all except disseminated lupus erythematosus, in which leukopenia is more common. Eosinophilia is most common in polyarteritis but is seen to a moderate degree in some patients with disseminated lupus erythematosus. The latter also has one of the most specific laboratory tests, namely the LE Cell or LE rosette phenomenon.[18]

Albuminuria and urinary sediment similar to chronic glomerulonephritis may be seen in all of the systemic collagen diseases. Telescopic urinary sediment, which contains red cell casts indicating acute renal involvement and waxy or hyaline casts indicating chronic renal involve-

ment, has been described in polyarteritis and disseminated lupus erythematosus.

The formation of fibrinoid in the extracellular space of connective tissue and the widespread involvement of blood vessels form the basis upon which pathologic changes are produced in the various collagen diseases. The pathologic changes vary in the different collagen disorders in that different vessels or organs may be involved more frequently and the cellular reaction may vary.

General Roentgen Findings

All organs may be involved to some extent by these disorders. Roentgenographic findings are most commonly demonstrated in the lungs, heart, and gastrointestinal tract. Other findings are described under specific disease headings below.

Changes in the small vessels of the lungs or heart were described in 28 of a series of 34 autopsies of five collagen disorders. Roentgen findings in the thorax were seen in two-thirds of a series of 109 patients at some time during the course of the disease.[30]

In general, the individual roentgen signs are not specific. However, when these signs occur in combinations or in chronologic sequence they may be strongly suggestive. Interstitial pneumonitis, pleural effusion, nonspecific cardiac enlargement[25, 39] and mild abdominal distention due to partial obstruction or adynamic ileus[14, 20] are common findings in most collagen disorders and reflect the widespread involvement of small blood vessels. The occurrence of two or more of these signs in combination or chronologic sequence should cause one to suspect one of the collagen diseases.

Pulmonary edema is a nonspecific sign which may follow cardiac or renal failure in any of the collagen diseases.

Clinical and roentgen signs of rheumatoid arthritis are seen in polyarthritis, scleroderma, and dermatomyositis, suggesting that rheumatoid arthritis is a part of the over-all systemic disease in these patients.

Differential Roentgen Diagnosis

The roentgen signs given above are common to several or all of the collagen disorders. There are additional signs which when combined with the more general signs may actually be of differential diagnostic significance.

Bilateral hilar vascular prominence, possibly secondary to pulmonary hypertension, is most commonly noted in polyarteritis.[23, 34, 37] Multiple small nodules may be present in the lung, representing small vascular lesions. Single or multiple larger nodules measuring 2 to 4 cm. in diameter are probably caused by infarcts,[12, 37, 38] and rupture of these may lead to pneumothorax or hemopneumothorax.

Disseminated lupus erythematosus tends to produce a polyserositis which may involve the pleura,[27] pericardium and peritoneum. Very small vessels are involved including those of the endocardium and cardiac valves.[1, 2, 19, 26, 29] There is also a tendency to produce small patches of atelectasis and pneumonitis, which has been called "atelectasing pneumonitis".[25]

Systemic scleroderma tends to form interstitial pulmonary fibrosis[6, 9, 15, 16]

Figure 2. Systemic scleroderma. Interstitial fibrotic change with appearance of multiple small cystlike radiolucent areas chiefly involving the lower two-thirds of both lungs.

which at times may appear as multiple tiny nodules or small cystlike radiolucent spaces in the lower two-thirds of both lungs (Figure 2). These patients often have dysphagia and barium study reveals a moderately dilated aperistaltic esophagus.[17] Reynaud's phenomenon [24] is frequent and there may be atrophy of the distal phalanges of the fingers with soft tissue calcification. Soft tissue calcification also occurs in the subcutaneous regions, especially in pressure-bearing areas, the annulus fibrosus of the heart and the capsule of the liver and spleen.[4, 17] Absorption of the peridontal membrane has also been described.[36]

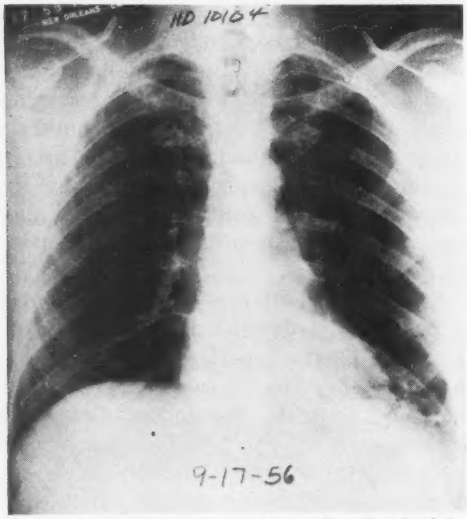

Figure 3. Dermatomyositis A-D. Gradual increases in cardiac size and pulmonary interstitial changes partially resolving after steroid therapy.

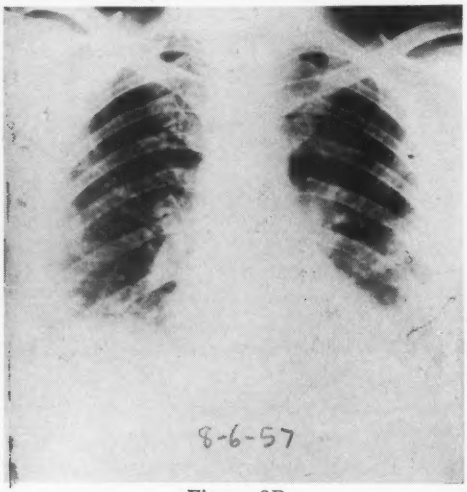

Figure 3B

In the past very few roentgen signs have been described in dermatomyositis.[14] Subcutaneous calcification has been noted in advanced cases. Recently it has been shown that some of these patients have vascular changes in the lungs that lead to interstitial inflammatory changes, fibrosis and emphysema (Figure 3). The heart may gradually enlarge,[41] as in other collagen disorders. The fibrotic

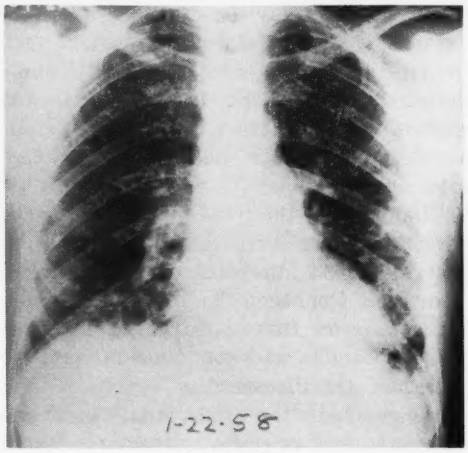

Figure 3C

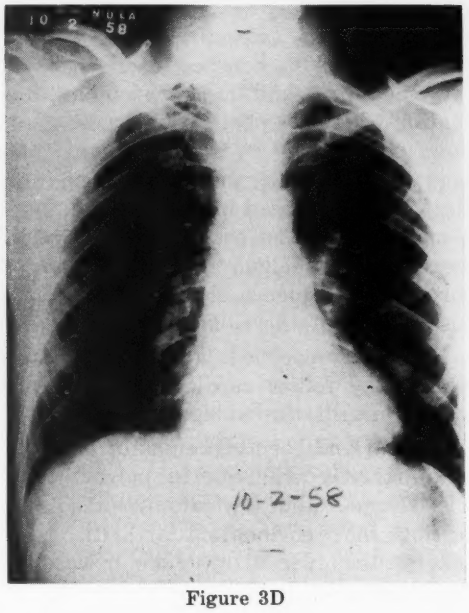

Figure 3D

changes do not tend to form tiny nodules or the cystlike changes which may occur in scleroderma.[5, 28, 32] Furthermore, these patients may have dysphagia and show an absence of esophageal peristalsis and may have an ileus similar to scleroderma. In patients with advanced disease it may be difficult to differentiate systemic scleroderma and dermatomyositis clinically and even on histopathologic study.[39]

Patients with rheumatic pneumonitis [26, 29] usually have a history of rheumatic heart disease. Respiratory distress, cough, chest pain, cyanosis, and hemoptysis are prominent and out of proportion to the general health status of the patient and to the degree of cardiac involvement. Evidence of active rheumatic carditis is noted in all cases.[26] The roentgen diagnosis of rheumatic pneumonitis may be suspected in a patient who shows signs of rheumatic heart disease with evidence of localized patches of pneumonitis before or between episodes of cardiac failure. If there is pulmonary vascular engorgement and edema the pneumonitis may be masked unless there are prominent localized infiltrates.

Figure 4. Wegener's granulomatosus, A. Nasal lesion involving medial walls of maxillary sinuses.

Wegener's granulomatosis apparently is related to polyarteritis histologically. The destructive lesion in the nose may cause destruction of the medial wall of one or both maxillary sinuses (Figure 4A). This destructive lesion has also been called midline lethal granuloma. The nasal lesion may be seen in the absence of obvious pulmonary lesions and vice versa. When pulmonary changes are present there is a tendency to form prominent nodular lesions some of which may cavitate (Figure 4B).

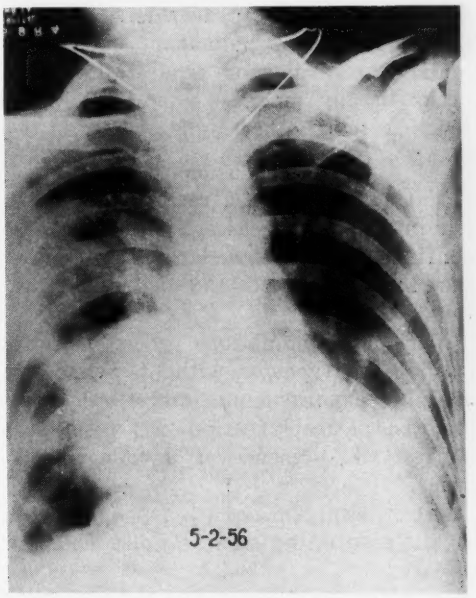

Figure 4. B. Pulmonary nodules with cavitation.

Discussion

All of the collagen diseases may involve the skin and various internal organs in various degrees and therefore tend to show great variability and a tendency to overlap clinically and pathologically. There may be no roentgen signs or the signs which are present may be said to be largely of a confirmatory nature, the evolution of which may reflect the general course of the disease process in question. At times the clinical diagnosis may be made long before any positive roentgen signs are present. However, the presence of combinations

of signs mentioned above may allow the presence of a collagen disease to be suspected. Further, when a collagen disease is suspected on clinical and roentgen evidence a thorough roentgen investigation may aid in differentiating the various types of collagen disorders. Incidental pneumonia or pulmonary edema secondary to cardiac or renal failure may occur in any of these conditions which tends to mask other signs.

Conclusions

Various nonspecific roentgen signs occur in collagen diseases which may be of confirmatory nature largely reflecting the clinical course of the disease in question.

Various combinations of nonspecific cardiac enlargement without pulmonary vascular engorgement, interstitial pneumonitis, pleural effusion and ileus may suggest the presence of a collagen disorder.

Other roentgen signs may be of value in differentiating the various collagen diseases.

References

1. Baehr, G. and Pollack, A. D.: Disseminated Lupus Erythematosus and Diffuse Scleroderma. J.A.M.A., 24: 1169.
2. Baggenstoss, A. H.: Visceral Lesions in Disseminated Lupus Erythematosus. Proc. Staff Meet., Mayo Clin., 27:412, 1952.
3. Becker, R. M.: Hypersensitivity and Diffuse Vascular Collagen Diseases. Bull. New England Med. Center,, 11:127, 1949.
4. Bevens, M.: Pathology of Scleroderma with Special Reference to Changes in the Gastrointestinal Tract. Am. J. Path., 21:25, 1945.
5. Brock, W. G.: Dermatomyositis and Diffuse Scleroderma; Differential Diagnosis and Reports of Cases. Arch. Dermat. and Syph., 1934.
6. Church, R. E. and Ellis, A.R.P.: Cystic Pulmonary Fibrosis in Generalized Scleroderma. Lancet, 1:392, 1950.
7. Church J. and Strauss, L.: Allergic Granulomatosis, Allergic Angiitis and Periarteritis Nodosa. Am. J. Path., 27:277, 1951.
8. Dawson, J., Ball, J., and Platt, R.: Kidney in Periarteritis Nodosa. Quarterly J. of Med., IV:517, 175, 1948.
9. Dostrovsky, A.: Progressive Scleroderma of the Skin and Cystic Sclerodermal Changes of the Lungs. Arch. Dermat. and Syph., 55:1, 1947.
10. Ehrich, W. E.: Nature of Collagen Diseases. Am. Heart J., 43:121, 1952.
11. Ellman, P. and Ball, R. E.: Rheumatoid Disease with Joint and Pulmonary Manifestations. Brit. M. J., 2:816, 1948.
12. Elkeles, A. and Glynn, L. E.: Serial Roentgenograms of the Chest in Periarteritis Nodosa as Aid to Diagnosis with Notes on Pathology. British J. Rad., 17:368, 1944.
13. Engfeldt, B. and Zetterstrom, R.: Disseminated Eosinophilic Collagen Diseases. Acta Med. Scand., 153: 337, 1955.
14. Garland, L. H. and Sisson, M. A.: Roentgen Findings in Collagen Diseases. Am. J. Roent., Rad. Ther. and Nuclear Med., 71:581, 1954.
15. Getzowa, S.: Cystic and Compact Pulmonary Sclerosis in Progressive Scleroderma. Arch. Path., 40: 99, 1945.
16. Goetz, R. H.: Pathology of Progressive Systemic Sclerosis (Generalized Scleroderma) with Special Reference to Changes in the Viscera. Clin. Proc., 4:337, 1945.
17. Hale, C. H. and Schatzki, R.: The Roentgenological Appearance of the Gastrointestinal Tract in Scleroderma. Amer. J. Roent., Rad. Ther. and Nuclear Med. 51:407, 1944.
18. Hargraves, M. M., Richmond, H. and Morton, R.: Presentation of two Bone Marrow Elements, the Tart Cell and the LE Cell. Proc. Staff Meet., Mayo Clinic, 23:25, 1948.
19. Israel, H. L.: The Pulmonary Manifestations of Disseminated Lupus Erythematosus. Amer. J. M. Sc., 226:387, 1953.
20. Kelly, G. H.: Collagen Diseases. Cand. M. A. J., 76:892, 1957.
21. Klemperer, P., Pollack, A. D., and Baehr, G.: Pathology of Disseminated Lupus Erythematosus. Arch. Path., 32:569, 1941.
22. Klinge, F.: Der Rheumatismus: Pathologisch-anatomische und experimentell pathologische Tatsachen and Ihre Auswertung fur, das artzliche Rheumo problem. Ergebn. d. Allg. Path. u. Path., Anat., 27:1, 1933.
23. Kussmaul, A. and Maier, R.: Ueber eine bisher nicht beschriebene eigendumlich Arterienerkrankung (periarteriti nodosa) die mit Morbus Brightu und rapid fortschreitender allgeimeiner Muskellakmung einbergeht. Deutsches Arch. Klin. Med., 14:484, 1866.
24. Linenthal, H. and Talkov, R.: Pulmonary Fibrosis in Raynaud's Disease. New Eng. J. Med., 224:682, 1941.
25. Lodge, Thomas: Pulmonary Fibrosis and Collagen Diseases—Radiological Aspect. Brit. J. Rad., 29: 348, 645, 1956.
26. Lustock, M. J. and Kuzma, J. P.: Rheumatic Fever Pneumonitis. Ann. Int. Med., 44:337, 1956.
27. Moersch, H. J., Purnell, D. C., and Good, C. Allen: Pulmonary Changes Occurring in Disseminated Lupus Erythematosus. Dis. Chest, 29:166, 1956.
28. Murphy, J. R., Krainin, P., and Gerson, M. J.: Scleroderma with Pulmonary Fibrosis. J.A.M.A., 116: 499, 1941.
29. Naish, A. E.: The Rheumatic Lung. Lancet, 2:10, 1928.
30. Nice, C. M., Jr., Menon, A. N. K., and Rigler, L. G.: Pulmonary Manifestations in Collagen Diseases. Am. J. Roent., Rad. Ther. and Nuc. Med., 264, 1959.
31. Nice, C. M., Jr. and Menon, A. N. K.: Clinical and Roentgenologic Signs of Collagen Diseases Involving the Thorax. Dis. Chest, in press.
32. Pugh, D. G., Kvale, W. F. and Margulies, H.: Scleroderma with Involvement of Viscera—Report of a case. Proc. Staff Meet., Mayo Clinic, 20:410, 1945.
33. Rich, A. R. and Gregory, J. E.: The Experimental Demonstration that Periarteritis Nodosa is a Manifestation of Hypersensitivity. Bull. Johns Hopkins Hosp., 72:65, 1943.
34. Rose, O. A. and Spencer, H.: Polyarteritis Nodosa. Quart. J. Med., New Series, 26:101, 1957.
35. Sante, L. R. and Wyatt, J. P.: Roentgenological and Pathological Observations in Antigenic Pneumonitis: Its Relationship to the Collagen Diseases. Amer. J. of Roent., Rad. Ther., and Nuclear Med., 66:527, 1951.
36. Stafne, E. C. and Austin, L. T.: A Characteristic Dental Finding in Acrosclerosis and Diffuse Scleroderma. Am. J. Orthodontics, 30:25, 1944.
37. Strickland, B. J.: Pulmonary Appearance in Periarteritis Nodosa. J. Faculty Radiologists, 6:201, 1955.

38. Sweeney, A. R. and Baggenstoss, A. H.: Pulmonary Lesions of Periarteritis Nodosa. Proc. Staff Meet., Mayo Clinic, 24:35, 1947.

39. Talbott, J. H. and Ferrandis, R. M.: Collagen Diseases, Grune and Stratton, New York and London, 1956.

40. Wegoner, F.: Uber eine ligen artgi, rhiangen granulomatosa mit bisander betulgung des arteriensystems under der Nieren Bect. Path. Anat. V_2, 102:36.

41. Weiss, S., Stead, E. A., Jr., Warren, J. V., and Bailey, O. T.: Scleroderma Heart Disease with a Consideration of Certain other Visceral Manifestations of Scleroderma. Arch. Int. Med., 71:749, 1943.

Discussions

Dr. Edgar H. Little (New Orleans): I had the privilege of knowing Dr. Leon Menville personally for a number of years, and I am certain that he would have been most interested in the content of this paper dealing with the group of intriguing diseases which have been classified generally as collagen diseases. I am sure his interest would revolve particularly around the challenge that these diseases offer in radiologic diagnosis, as he was always able to meet challenge with achievements in his chosen specialty of Radiology.

Collagen diseases constitute an interesting group of disorders. They are interesting to the clinician because of their diagnostic and therapeutic challenge, to the pathologist because of recent interest in intercellular substances, and to the radiologist because of the challenge of differential diagnosis. The symptoms and diagnosis are not as clear-cut as an attack of gout, cerebral thrombosis or peptic ulcer. From the standpoint of the radiologist, it has only been in relatively recent years that we have learned to recognize certain aspects of collagen diseases. In my old textbooks on x-ray diagnosis, polyarteritis nodosa and lupus erythematosus were not even listed in the index, and we usually thought of the diagnosis of these diseases as dependent entirely on clinical history, findings, and biopsy and therefore of no particular interest to the radiologist.

As Dr. Nice has so clearly pointed out, we are now able to suspect, if not conclude, the presence of a collagen disease from the roentgenograms, particularly if the disease is systemic and the roentgen findings occur in combinations with sequential studies.

The roentgen examination can also serve to differentiate one collagen disease from another as well as to check the course of the disease, since changes may be reversible when there is a satisfactory response to therapy. Certainly, my experiences with collagen disorders agree with those of Dr. Nice.

Skeletal and gastrointestinal changes in scleroderma are quite diagnostic. Cardiac and pleuropulmonary changes are much more subtle but are open to ready analysis because of present day widespread availability of the chest study. Pericardial effusion, cardiac enlargement, pleural effusion, pulmonary nodular changes and variable degrees of pulmonary edema or fibrosis may occur. In instances where only one or two of these findings are evident, it is obvious that an out and out diagnosis of a collagen disease would be equivocal. However, it is to be emphasized that in such instances it is desirable that radiologists, as clinicians, be able occasionally at least to suggest the consideration of one of these diseases, on logical grounds, and be cognizant of the further studies, clinical, laboratory or pathological, required to confirm the diagnosis. It is also desirable, in these obscure cases, that radiologists and clinicians pool their information, in close cooperation, in an effort to conclude a diagnosis.

Historical Notes

The only real progress made by mankind has been in the exact sciences, as Chemistry, Botany, Astronomy, Mathematics, Natural Philosophy, Mechanics, etc., which is almost Godlike, and in this the inferior races take no part whatever. It is humiliating to look on the infirmities even of genius. Lord Bacon in morals was beneath contempt. Napoleon, Alexander, Caesar, Frederick the Great, were only great highway robbers, who trampled morals, religion, and everything under foot to attain their ends.

J. C. Nott: Instincts of Races, New Orleans M. & S. J. 19:9 (July) 1866.

Steroid Diabetes*

• All aspects of this problem are far from solved. In the normal individual the incidence of steroid diabetes is only one per cent.

F. GILBERT McMAHON, M. D.
New Orleans

STEROID diabetes is a type of diabetes mellitus induced by adrenal cortical steroids. Steroid diabetes, like steroid ulcer, steroid hypertension, steroid psychosis, steroid purpura, etc. might be considered a side-effect of corticosteroid therapy. For those of you who are "lumpers" and prefer to classify things, Table 1 shows where steroid diabetes might fit into Randle's classification [1] of clinical diabetes.

TABLE 1.
CLASSIFICATION OF CLINICAL TYPES OF DIABETES MELLITUS *

I	ESSENTIAL DIABETES
	A. Severe Form
	B. Mild Form
	1. Obese
	2. Non-obese
II	SECONDARY DIABETES
	A. Post-pancreatectomy, pancreatitis, pancreatic Ca, etc.
	B. Acromegaly
	C. Hyperadrenocorticism
	1. Endogenous (Cushing's Syndrome)
	2. Exogenous (Steroid Diabetes)
	D. Hyperthyroidism
	E. Pheochromocytoma
	F. Lipoatrophy

* From Randle, P. J.: Endocrine Factors in the Syndrome of Diabetes Mellitus, Modern Trend in Endocrinology, Harold Gardiner-Hill, Paul B. Hoeber, Inc. New York, 1958. Used with permission of the author and the publisher.

The terms "steroid" or "corticoid", hereafter shall refer to the so-called glucocorticoids, i.e., to the anti-inflammatory and anti-allergic hormones secreted by the adrenal cortex, or else to their synthetic analogs. Figure 1 reviews the configuration of the steroid nucleus, together with some of the more important endogenous steroids. Figure 2 reviews the structures and trade names of the currently available corticosteroids.

A complete discussion of steroid diabetes should include both the influence of diabetes on steroids and the effect of steroids on the diabetic state. However, neither the mechanism of steroid effects on carbohydrate metabolism, nor the nature of the metabolic defects in diabetes is fully understood. So that the most we can do is point out a few of the salient interactions of these two systems insofar as they are now understood.

Effects on Carbohydrate Metabolism

In 1930, Britton [2] showed that extracts of the adrenal cortex administered to normal or andrenalectomized animals caused both elevated blood glucose levels and elevated liver and muscle glycogen

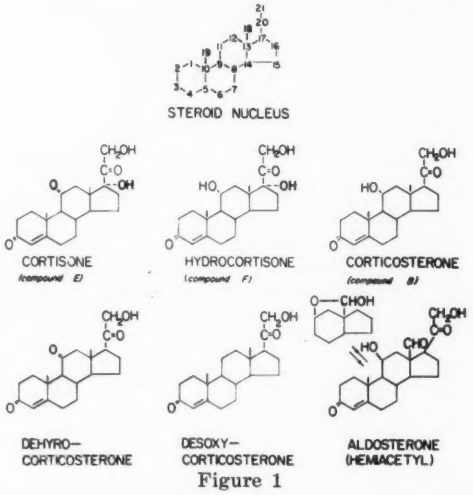

Figure 1

* Presented at the Louisiana State Meeting of the American Diabetes Association, Nov. 7, 1959, in Baton Rouge, La.

From Mahorner Clinic and Department of Medicine, Louisiana State University Medical School.

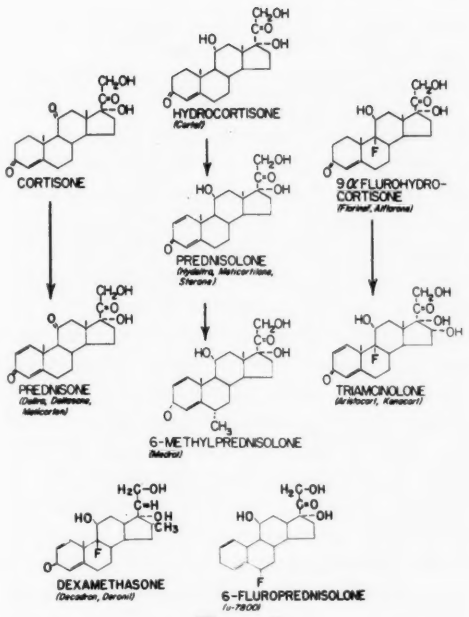

Figure 2

contents. In 1941, Dwight Ingle [3] reported the production of glycosuria when hydrocortisone was administered to normal laboratory animals. Since then it has been frequently shown that normal human subjects given large doses of ACTH or steroids will respond with elevated blood sugar levels.[4] The most pronounced effects of steroids on carbohydrate levels can be seen in diabetic subjects where steroid administration causes exacerbation of their hyperglycemia.

Endocrine-deficient states such as Addison's disease or panhypopituitarism have also been shown to respond to steroid administration with an elevation of blood sugar level. Thus it has been amply demonstrated that corticoids elevate the blood glucose level in a variety of conditions. But how do they elevate blood glucose? *Either they increase glucose production or they decrease glucose utilization.* There is good evidence that steroids enhance hepatic gluconeogenesis and cause an increased output of glucose by the liver. Among the various studies demonstrating this is the work of Stetten, et. al.[5] A constant infusion of C^{14} labelled glucose was given animals at a rate which caused glycosuria until a plateau of C^{14} excretion was reached. The specific activity of the urinary glucose was then compared with that of the infused glucose and from this ratio and the rate of glucose infused, he calculated the rate at which glucose was being generated. Then he gave cortisone for six days and found a sevenfold increase in glucose formation over that of control animals.

Other studies of Altszuler, et al.,[6] Lang, et al.[7] and others give convincing evidence that corticoids enhance gluconeogenesis. As to the effect of steroids on glucose utilization, the evidence is very conflicting. Studies have been done using hepatectomized animals, eviscerated animals, intact animals, as well as in vitro studies. Reports have appeared of decreased glucose utilization, increased utilization or no effect. This aspect of the problem is far from resolved. Glycosuria has been occasionally noted despite normal carbohydrate tolerance.[8] Both a rise in glomerular filtration rate [9] and a decrease of maximum tubular reabsorption [10] of glucose have been reported following steroid administration to explain this phenomenon.

Effect on Diabetic State

The adrenal steroids also inhibit the hypoglycemic effect of insulin. This phenomenon has been amply demonstrated, but, here again, the mechanism has not been worked out. Perhaps the ultimate clinical demonstration of this is the regulation of hypoglycemic reactions due to metastatic functional Islet cell carcinoma.[11, 12] In 1910, Porges [13] pointed out the frequency with which hypoglycemic reactions occurred in Addisonian patients. In 1925, Maranon [14] demonstrated the marked sensitivity of these patients to small doses of insulin. Recently Beaven, Thorn, et al.[15] reviewed the 63 cases in the literature of the simultaneous occurrence of diabetes and Addison's disease in the same individual. In 17 Addisonian patients who subsequently developed diabetes, the dose of insulin needed before

cortisone was given averaged 16 units/day. After giving cortisone in replacement doses, the average dose of insulin required rose to 27 units/day. Just as these observations of Addisonian patients demonstrate some "anti-insulin" effect of the steroids so, too, does the well-recognized decreased sensitivity of the Cushing's patient to insulin. Just how the steroids exert their anti-insulin effect is not yet clear, but it seems to be an indirect action.[16, 17]

Characteristics of Steroid Diabetes

In 1949, Sprague[18] reported the production of a diabetic glucose tolerance test in normal patients given 200 mgm./day cortisone. In 1950, this same investigator termed this phenomenon "steroid diabetes".[19] It has long been recognized that patients with Cushing's syndrome frequently have diabetes. The incidence of disturbed carbohydrate tolerance has been variously given from 50 to 75 per cent or 88 per cent[20-22] and frank diabetes in from 10 to 25 per cent.[23] We can obtain virtually all the features of exogenous steroid diabetes by considering the Cushing's patient. His hyperglycemia is difficult to control with diet and insulin. Ketoacidosis rarely occurs and diabetic coma has not been reported in the Cushing patient. He demonstrates the anti-anabolic effects of hypersecretion of adrenal steroids with negative nitrogen balance, osteoporosis, muscle wasting, friable skin, etc. When his adrenal glands are removed, his diabetes usually disappears. Finally, when a Cushing's subject is fasted his glycosuria diminishes. These characteristics of steroid diabetes are listed in Table 2.

In 1958, there were in excess of 100 million dollars in prescriptions written for corticoids in the U. S. Who among these tens of thousands of patients receiving steroids will get diabetes? How can it be prevented? How can it be treated?

TABLE 2.
CHARACTERISTICS OF STEROID DIABETES

1.	Relative insulin resistance
2.	Rarely keto-acidotic
3.	Glycosuria diminishes with fasting
4.	Negative nitrogen balance
5.	Reversible by withdrawing steroids

When the nondiabetic, normal subject is given a sufficiently large dose of any one of the currently available steroids, he will initially develop a decreased carbohydrate tolerance. A single small oral dose given to produce hyperglycemia has even been used as a suitable method for assaying the potency of these steroids.[24] If a large dose is given continuously, the normal individual will develop a tolerance within a few days and re-establish euglycemia. The explanation generally offered for this is that in the normal subject there is sufficient functional reserve in the beta cells to produce greater amounts of insulin in response to the hyperglycemic stimulus.

At the other extreme, there exists such a small dose of corticoids that no clinically detectible hyperglycemic effect will be produced. We can, therefore conclude that dose and duration seem to be factors in the production of steroid diabetes. The nature of the corticoid is another factor. In spite of the widely advertised safety factor in administering dexamethasone even to diabetic subjects, *all* of these clinically popular steroids can produce diabetes. The hyperglycemic principle is built into the very anti-inflammatory or anti-allergic nature of these drugs. I have personally produced steroid diabetes with Decadron in a young Negro patient with far-advanced pulmonary tuberculosis in a tuberculosis hospital where steroids were being given to all seriously ill patients along with combined antituberculous therapy. Now I notice that this same pharmaceutical house is advertising in our medical journals that Decadron is safe to give the hypertensive. I should like to deviate for a moment and say a word about side-effects of the corticosteroids.

Side Effects of Steroids

Table 3 represents an effort to classify side-effects of steroids based on the risk involved to the patient.[25] Class I

TABLE 3.
CLASSIFICATION OF SIDE-EFFECTS OF CORTICOSTEROIDS

CLASS I:	Minimal risk to the patient; chiefly of cosmetic significance
	Redistribution of body fat
	Striae
	Acne
	Hypertrichosis
	Plethora
CLASS II:	Minimal risk unless patient predisposed
	Diabetes mellitus
	Steroid ulcers
	Electrolyte imbalance
	Mental disturbances
	Thrombophlebitis
	Hypertension
	Spread or masking of infections
	Protein catabolism
	CNS convulsions
CLASS III:	Always a major risk
	Class II side-effects in a predisposed patient
	Chronic hypercorticism
	Induced adrenal atrophy
	Collagen disease (?)

side-effects are virtually inevitable results of employing suppressive doses for maintenance therapy. These are of minimal importance in a patient who otherwise needs steroids. Class II side-effects are also minimal hazards if the patient is not predisposed. If there is a family history of diabetes, or a borderline glucose tolerance test, if the patient is previously hypertensive, or has a history of peptic ulcer, the administration of steroids leaves the physician with a much greater responsibility to watch for these potential complications and to employ prophylaxis when possible. Edema formation and electrolyte imbalances are not so common with the newer steroids.

Incidence From Use of Steroids

By far the vast majority of patients receiving steroid therapy do not develop steroid diabetes. The incidence is less than 1 per cent. If the diabetic patient truly needs steroids, there should be no hesitation about their use. He may only require 15 to 20 units/day more of his insulin. The refractoriness of such patients to insulin is usually only relative. When the steroid therapy is withdrawn, of course, the steroid diabetes disappears within a few days. In nondiabetic subjects the production of a permanent case of diabetes is an acceptable and rare risk.

It is generally felt that a familial deficit in the potential reserves of the beta cells predisposes to the development of diabetes under sustained stress. The production of diabetes following pregnancy, burns, fractures, surgery, or the continued administration of large doses of steroids probably only occurs in the prediabetic subject. If one wishes to exclude the diabetes-susceptible patients before giving steroids, the cortisone glucose tolerance test of Conn might well be helpful.[26]

The treatment of steroid diabetes is either the administration of extra insulin, or the withdrawal of the steroid. As Reifinstein [27] has often suggested, the co-administration of combined estrogen-androgen may well maintain a positive nitrogen balance during corticosteroid administration.

References

1. Randle, P. J.: Endocrine Factors in the Syndrome of Diabetes Mellitus, Modern Trend in Endocrinology, Harold Gardiner-Hill, Paul B. Hoeber, Inc., NYC, 1958.
2. Britton, S. W.: Adrenal Insufficiency and Related Considerations, Physiol. Rev. 10:617, 1930.
3. Ingle, D. J.: Diabetogenic Effect of Stilbesterol in Force-Fed Normal and Partially Depancreatized Rats, Endocrin. 29:838, 1941.
4. Conn, J. W. and Fajano, S. S.: Influence of Adrenal Cortical Steroids on Carbohydrate Metabolism in Man, Metabolism. 5:114, 1956.
5. Welt, I. D., Stetton, DeW., Ingle, D. J. and Morley, E. H.: Effect of Cortisone Upon Rate of Glucose Production and Oxidation in the Rat, J. Biol. Chem. 197:57, 1952.
6. Altszuler, N., Steele, R., Wall, J. S., and DeBodo, R. C.: Effects of Adrenocortical Steroid on Carbohydrate Metabolism in Hypophysectomized Dogs, Am. J. Physiol. 191:29, 1957.
7. Long, C. N. H., Katzin, B. and Fry, E. G.: The Adrenal Cortex and Carbohydrate Metabolism, Endocrinology. 26:309, 1940.
8. Kass, E. H., Ingbar, S. H., and Finland, M.: Renal Glycosuria Induced by Adrenocorticotrophic Hormone, Proc. Soc. Exp. Biol. & Med. 73:669, 1950.
9. Weintraub, D. H., Calcagno, P. L., Kelleher, M. K., and Rubin, M. C.: Mechanism of Renal Glycosuria in ACTH-Treated Premature Infants, Proc. Soc. Exp. Biol. & Med. 81:542, 1952.
10. Earle, D. P., Alexander, J. D., Farber, S. J., and Pellegrew, E. D.: Observations on the Relation of Renal Function Changes to Glycosuria Effect of ACTH, Proc.

2nd Clin. ACTH Conf. J. R. Mote, Ed. N. Y., Blakiston Co., 1:139, 1951.

11. Jailer, Joseph W.: Hydrocortisone, Its Newer Analogs and Aldosterone as Therapeutic Agents, Ann. New York S. Acad. Sci. 61:281, 1955.

12. Mason, A. S.: Functioning Malignant Islet-Cell Tumor of Pancreas. Recurrence of Hyperinsulin Treated with Cortisone, Proc. Royal Soc. Med. 46:305, 1953.

13. Porges, O. Z.: Ueber Hypoglykamie bei Morbus Addison Sowie bein Nebenniereneosen Hunden, Ztschr. f. Klin. Med. 69:341, 1910.

14. Maranov, G., Action de l'Insuline dans l'Insuffisance Surrenale, Presse Med. 33:1665, 1925.

15. Beaver, D. W., Nelson, D. H., Renold, A. E. and Thou, G. W.: Diabetes Mellitus and Addison's Disease: A Report on Eight Patients and a Review of 55 Cases in the Literature, New England J. Med. 261:443, 1959.

16. DeBodo, R. C. and Altszuler, N.: Insulin Hypersensitivity and Physiologic Insulin Antagonists, Physiol. Rev. 38:389, 1958.

17. DeBodo, R. C. and Sinkoff, M. W.: Recent Progress in Hormone Research, 8:511, 1953.

18. Sprague, R. G., Mason, H. L. and Power, M. H.: Studies on the Effects of Adrenal Cortical Hormones on Carbohydrate Metabolism in Human Subjects, Proc. Am. Diab. Assoc. 9:149, 1949.

19. Sprague, R. G., Hayles, A. B., Power, M. H., Mason, H. L. and Bennett, W. A.: Steroid Diabetes and Alkalosis Associated with Cushing's Syndrome, J. Clin. Endocr. 10:289, 1950.

20. Lukens, F. D., Flippin, H. F. and Thigpen, F. M.: Adrenal Cortical Adenoma with Absence of Opposite Adrenal, Am. J. Med. Sci. 193:812, 1927.

21. Soffer, L. J.: Disease of the Endocrine Glands, 2nd Edit., Lea & Febiger, Phila., p. 347, 1958.

22. Hurnthal, L. M. and O'Sullivan, J. B.: Cushing's Syndrome: Clinical Differential Diagnosis and Complications, Ann. Int. Med. 51:1, 1959.

23. Thorn, G. W., Renold, A. E. and Cahill, G. F.: The Adrenal and Diabetes: Some Interactions and Interrelations, Diabetes. 8:337, 1959.

24. West, K. M.: Relative Eosinopenic and Hyperglycemic Potence of Glucocorticoid in Man, Metabolism. 8(4):441, 1958.

25. McMahon, F. G. and Gordon, E. S.: Side Effects Noted in Treating 77 Consecutive Patients with Methylprednisolone, J.A.M.A. 168:1208, 1958.

26. Conn, J. W.: ACTH Diabetes in Man. The End-Organ Response Versus the Adrenocortical Response, J. Clin. Endocr. 10:825, 1950.

27. Reifenstein, E. C.: Control of Corticoid Induced Protein Depletion and Osteoporosis by Anabolic Steroid Therapy, Metabolism. 8(4):78, 1958.

UNIVERSITY OF LOUISIANA: MEDICAL DEPARTMENT

The twenty-ninth Annual Course of Lectures in this Department will commence on Monday, the 12th of November, 1866, and terminate on the 24th of March, 1867.

Preliminary lectures will be delivered in the Amphitheatre of the Charity Hospital, beginning the 15th of October, on Clinical Medicine and Surgery, without any charge to students.

Notwithstanding the exhausted condition of the Southern States, resulting from the late disastrous war, the class of the session of 1865-66, numbered one hundred and eighty-four Matriculates, which far exceeded the expectations of the Faculty, and is an earnest of the renewed success of the Institution.

The Institution is endowed by the State; and the Legislature, at its last session, recognizing the vast importance of the University to the State, and to the Southern section of the country generally, made ample provision for repairing, extending, and improving the buildings, purchasing additional apparatus, and otherwise increasing the facilities for instruction.

Annual Circular of the Medical Department of the University of Louisiana: New Orleans M. & S. J. 19:5 (July) 1866.

Current Management of Hepatitis*

• Experience with viral hepatitis is reviewed by the author, who presents a therapeutic regimen, which has been found to be successful in about 92 per cent of the patients who were subjected to it.

EDWARD R. CHRISTIAN, M. D.
New Orleans

VIRAL hepatitis is usually a benign and self-limited disease whose very nature encourages complacency in both its victim and his physician—yet it may pursue a relentless course and fulminate in death while the physician, lacking a specific therapeutic tool, is helpless to intervene. Its deceptive character is all the more tragic because the disease prefers to strike young adults who are essential to the stability of the home. Even if the disease does not terminate fatally, its import is exaggerated by the threat of prolonged morbidity. When its course is benign and free from complication, as it is in the majority of cases, the average period of morbidity exceeds two months; furthermore, over half of that time is spent in greatly reduced activity if not bed rest. The unfortunate victim who feels compelled to return to full physical activity before the disease has completely subsided does so at the risk of a recrudescence with further debility and, perhaps, progression to permanent liver damage. The purpose of this paper is to review our experience with viral hepatitis and to present a therapeutic regimen, established through trial and error, that has been successful in restoring to apparent good health about 92 per cent of the patients subjected to it.

In the absence of a specific cure for the disease, current treatment of the usual case of viral hepatitis hinges upon rather simple hygienic principles that can be employed in the home as well as in the hospital. Obviously, all patients with the disease cannot be hospitalized for one reason or another, nor is it advocated that they should be. Patients are either frightened into seeking hospitalization by the appearance of jaundice (in a recent series only 10 of 107 patients were not jaundiced when admitted [1]), or are referred by their physicians. Referral often implies unusual severity of the disease and/or impracticability of adequate home treatment. In the series just mentioned the average patient (exclusive of those with chronic disease and of those who died) was ill for sixteen days prior to hospitalization. It is evident, then, that during the phase of the disease when the greatest havoc is being wrought in the liver, the average victim is not subject to the therapeutic discipline of the hospital and, in all likelihood, has not as yet sought the aid of his physician. Perhaps in that interlude between the onset of the disease and the institution of adequate treatment lies the cause of the prolonged morbidity that characterizes viral hepatitis. The hospital remains the place where the strict regimen often necessary in the treatment of the disease can be carried out most effectively.

Treatment

A. **Rest:** Rest is regarded as the most important single element in the treatment of hepatitis. In these days of public awareness of more dramatic therapeutic measures, rest often becomes an ethereal thing imposed with difficulty on patients who may be deeply jaundiced, yet may feel well. The physician must determine the degree of rest that is necessary and over what period it must be imposed. Moreover, he must deal with

* Presented at the Seventh-ninth Annual Meeting of the Louisiana State Medical Society, New Orleans, May 5, 1959.

the dismal problem of the patient who cannot obtain the prescribed amount of rest because of economic demands made of him.

It is thought that the patient with early acute hepatitis should undergo a period of strict bed rest the duration of which is determined by the observation needed to anticipate the probable course of the disease. Even this may be difficult, however, since progressively severe hepatic damage has followed trivial attacks of hepatitis and, to the contrary, minimal hepatic damage has followed severe, life-threatening attacks of the disease. Strict bed rest as used here implies loss of bathroom privileges.

Laboratory tests are the best available guides for resumption of physical activity — particularly, the determination of serum bilirubin, 2-to-4 p.m. urine urobilinogen and bromsulfalein retention. Bathroom privileges are allowed once the serum bilirubin has reached its maximum level and has begun to decrease. Bed rest is terminated when the serum bilirubin has decreased to 1.0 mg. per cent or less, and the 2-to-4 p.m. urine urobilinogen output is less than 1.0 Ehrlich unit.

Improvement in those laboratory tests should be, and generally is, paralleled by subjective improvement; however, persistence of morbidity calls for additional bed rest even if liver function tests are normal. After the period of strict bed rest is over, gradual ambulation of the patient is allowed until he has the freedom of the hospital or his home. Greater freedom of activity is allowed once the retention of bromsulfalein is 10 per cent or less at 45 minutes (5 mg./kg. dose). It is advised that periods of rest be included in the day's schedule until bromsulfalein retention has decreased to 5 per cent or less at forty-five minutes. During this period of convalescence and for several months thereafter hepatotoxic substances must be avoided.

Hepatic function tests should be repeated at intervals for evidence of deterioration and the patient should be examined for recrudescence of disease. Ominous signs include loss of appetite, jaundice, and darkening of urine. The latter sign, which seldom fails to attract the attention of the patient, is respected as a harbinger of active hepatitis because it often antedates frank jaundice. Any recrudescence of symptoms and/or deterioration of liver function tests during the convalescent phase calls for resumption of bed rest with subsequent graduation of activity in the manner just described. At this point it should be added that patients with persistent jaundice, particularly with history of previous episodes of asymptomatic jaundice, should be submitted to needle biopsy of the liver. By that means differentiation between chronic hepatitis and the Dubin-Johnson syndrome can be made.

B. **Diet:** In the treatment of viral hepatitis we have gone through a period of overly zealous approach to dietary management. Such a period was undoubtedly a natural sequela to the importance traditionally attached to the influence of diet in the treatment of cirrhosis. It must be recalled, however, that the victims of hepatitis are usually young persons who have been in previous robust health and excellent nutritional state; therefore, they are not subject to the deleterious effects of poor nutrition that plague the person with cirrhosis. It seems, then, that the diet prescribed for the usual victim of hepatitis is adequate if designed to prevent the development of deficiencies during the course of the disease. Of course, this does not infer that these patients who are malnourished prior to the onset of hepatitis should not have their deficiencies corrected through a more aggressive dietary program. The need for such action is highlighted by the added severity that hepatitis assumes in debilitated folk.

Early in the course of the disease problems which arise relative to dietary management include anorexia, nausea, and vomiting. During that phase adequate fluid and caloric intake can best be af-

forded through the parenteral administration of glucose solutions, plus the necessary vitamins and electrolytes to maintain physiological levels. When anorexia is profound it is advisable to administer such supplements on an "around-the-clock" schedule, thus avoiding any lengthy period when the damaged liver is deprived of an adequate supply of glucose. It is important that the physician resort to an accurate food intake tally in determining how much parenteral feeding is necessary, for the word of the anorexic patient is not trustworthy. To him a forkful becomes a plateful, and any quantity of food that satisfies his appetite is interpreted as an adequate meal, regardless of how small it might be.

Once the appetite has returned and parenteral supplements are no longer indicated, one is faced with the problem of what to feed and how much. It is thought that the patient's appetite can then serve as the best guide in dietary management. A general diet is recommended with added portions to bring the daily caloric intake to between 2500 and 3000. Included in such a diet are about 100 grams of protein and 70 to 100 grams of fat. In the usual case of hepatitis there is no real need for a greater quantity of protein, especially in view of the failure of comparatively enormous quantities to alter the course of the disease significantly. However, additional protein may be indicated when a previous deficiency exists, or when the disease causes a failure in protein synthesis incident to liver damage. Stringent fat restriction has been passé in the treatment of hepatitis since it became evident that food containing little fat is so unsavory that appetite is seriously hampered. Furthermore, fats cause no demonstrable harm to patients with hepatitis who tolerate them quite well, particularly those of dairy origin. They need not be restricted unless there is an aversion to them, in which event the patient usually foregoes them voluntarily.

In our experience the plan of treatment outlined so far, which insists only upon adequate rest and common-sense dietary control, will restore to good health the great majority (roughly, 90 per cent) of patients with viral hepatitis. Occasionally, however, one fails to respond to the regimen, but progressively deteriorates.

The following are signs that call for aggressive action in an effort to forestall hepatic coma, a state from which there is seldom a return: (1) progressive subjective deterioration in spite of adequate treatment; (2) deepening jaundice; (3) progressive lengthening of the prothrombin time in spite of adequate parenteral supplement of vitamin K; (4) progressive increase in the ratio of free:total serum cholesterol. About 1 per cent of patients who develop hepatitis will exhibit those ominous signs and die. What else can be offered the severely ill to keep him out of that one per cent?

Other Supportive Measures

A. **Hormones:** Although their routine use in the uncomplicated case of hepatitis is not recommended, adrenocortical hormones and adrenocorticotropic hormone (ACTH) offer considerable promise of benefit if employed as soon as inadequacy of conservative therapy is suspected. By this time most of us have had apparently moribund victims of hepatitis make dramatic and seemingly miraculous response to one of these hormones. ACTH is preferred if the ratio of free:total cholesterol is within normal range, and it is administered by slow intravenous drip in dosage of 25-40 mg. daily. If the ratio of free:total cholesterol is abnormally high, however, cortisone is the hormone of choice—or one of the newer steroid hormones. Cortisone is administered intramuscularly in an initial dose of 300 mg., thereafter reduced by 25 to 50 mg. daily until the minimal effective dose is established. Once committed to the use of either hormone, the physician is obliged to continue its use until recovery is certain; i.e., overtreatment is less dan-

gerous than premature withdrawal of the hormone.

Contrary to the usual situation in hepatitis, fluid and electrolyte balance now must be followed closely, particularly the serum potassium. Whereas ACTH and cortisone induce a potassium diuresis that may necessitate supplement of the ion, the severely ill patient who becomes oliguric may have hyperkalemia that demands reduction of potassium intake. Patients receiving either ACTH or steroid hormone are placed upon low-sodium diets.

B. **Blood:** Failure of prothrombin synthesis by the damaged liver leads to a hemorrhagic tendency that may have serious proportions. It is not uncommon for acute blood loss to be involved in the death mechanism in fatal hepatitis. Transfusion of fresh whole blood is indicated when response to parenterally administered vitamin K is lacking and signs of hemorrhage appear.

C. **Oxygen:** Hypoxia is devastating to the damaged liver, therefore the organ should be supplied with maximally oxygenated blood.

D. **Antibiotics:** Antibiotics have been employed to reduce intestinal flora, thereby reducing the streaming of bacteria and their products through the damaged liver. We have seen little benefit from antibiotics in the treatment of viral hepatitis, and do not use them routinely. However, progressive deterioration of a patient warrants some measure of empiricism and we are not adverse to using antibiotics under those circumstances. In addition, the patient in imminent danger of hepatic coma, particularly if gastrointestinal bleeding has occurred, may be given purgatives to remove products that might augment the blood level of ammonia-like substances.

E. **Lipotropes:** Fatty metamorphosis is of such rare occurrence in viral hepatitis that its demonstration casts doubt on the diagnosis. Therefore, one would expect little benefit from the use of lipotropic substances in the treatment of the disease. However, since methionine must be present in the parenchymal cell to prevent its necrosis, it is advisable to insure an adequate supply of that amino acid.

F. **Protein hydrolysates:** In the patient who has a failing nitrogen balance, the question arises as to safe, adequate replacement. Coma is the most dreaded event in the course of fulminating hepatitis, for it almost invariably precedes death. What causes hepatic coma remains an enigma, but to date derangements in ammonia metabolism have been indicated as the most plausible explanation. In that light it seems illogical, if not dangerous, to administer protein products unless they are needed and then only if the patient can tolerate them without developing symptoms and signs indicative of protein intoxication. The prodromal phase of hepatic coma is easily recognized clinically, but the clinical impression may be substantiated by a brain-wave pattern if the electroencephalograph is available. At the earliest sign of protein intoxication protein starvation must be instituted.

G. **Glutamic acid and arginine:** These materials may be used when hepatic coma threatens, for they bind ammonia during their biochemical involvement in the body—the former, in the synthesis of glutamine and the latter, in the urea cycle.

H. **Serum albumin:** This costly blood derivative has a questionable place in the treatment of severe hepatitis. It may be indicated if liver damage has seriously interfered with albumin synthesis. It may have some value in averting hepatic coma, inasmuch as we have seen one patient recover from coma (due to Laennec's cirrhosis) while under treatment with it.

I. **Liver extract:** Liver extract has fallen from its traditional place in the treatment of liver disease, but we use it empiracally in severe disease, hoping it offers some benefit however slight.

Other Considerations

A. **Problems in diagnosis:** The two diseases most commonly involved in the differential diagnosis with viral hepatitis, at least in this area, are Weil's disease and extrahepatic biliary tract disease with obstruction. Since early antibiotic therapy is often imperative in the management of Weil's disease, it is thought that empiric treatment is warranted in questionable cases until serological studies can be completed. Differentiation between parenchymal and surgical jaundice remains a problem in spite of extensive batteries of liver function tests and other diagnostic procedures. Needle biopsy of the liver will usually differentiate between the two and should, when practical, precede panicky surgical intervention in puzzling cases of jaundice. We have recently proven to our own satisfaction that the abnormally high elevation of serum iron that is peculiar to viral hepatitis is of distinct value in the differential diagnosis of jaundice.

B. **Prophylaxis:** Outside the military situation the family is probably the epidemiological unit in viral hepatitis (IH). If victims of the disease must remain in contact with other members of the family during the acute phase of the disease, the protective use of gamma globulin is advisable. This may be of added importance in view of recent demonstration that a carrier state of the disease exists. Families in which young children are the first to contract the disease should take added hygienic precautions, because the habits of small children easily lend themselves to fecal contamination of food and drink.

The poor prognosis of viral hepatitis (SH) in chronically ill patients dictates the belief that the transfusion of such patients with whole blood or the administration of its derived products should be regarded as a serious procedure of potential hazard to the patient. In a recent series [1] the death rate in transfusion hepatitis (SH) was 50 per cent as contrasted with a death rate of 4.7 per cent in infectious hepatitis (IH). The ever-present threat of inoculation hepatitis calls for constant alertness for breaks in technic in the proper sterilization of equipment used in the parenteral administration of medicaments.

Case Report

The following abstract records the events in a patient who, in our experience, was the most severely ill victim of hepatitis who survived the disease. Inasmuch as the patient did not respond to adequate conservative therapy, his recovery is regarded as a tribute to the lifesaving effect of steroid hormone (Fig. ure 1).

The patient was a 43-year-old white man hospitalized with infectious hepatitis (IH) of two weeks' duration. His illness did not seem severe; nevertheless, he was placed on the established therapeutic regimen which included complete bed rest, special diet and supplementary vitamins. Serum bilirubin remained essentially constant at a moderately elevated level for about two weeks after the patient was admitted. Subjectively, he felt surprisingly well and had none of the classical signs that usually accompany the early phase of hepatitis, such as anorexia, nausea and vomiting. Shortly thereafter, however, the serum bilirubin began to rise progressively to its highest level, 25 mg. per cent. Concurrently prothrombin time lengthened and there was an increase in the ratio of free:total serum cholesterol. The patient's paradoxical sense of well-being continued to belie those alarming signs of progressive parenchymal necrosis.

At this point it is interesting to note that the serum iron had risen to 480 mcg. per cent as compared with the normal value of 143 mcg. per cent. Because of the confusing elements in the diagnostic picture that need not be described here, needle biopsy of the liver was performed on the forty-fourth day of illness and verified the presence of extensive necrosis compatible with viral hepatitis. The patient was then started on cortisone therapy and prompt decrease in serum bilirubin to 10 mg. per cent had occurred by the fourth day thereafter. From then on there was sustained subjective improvement that was watched by gradual return of liver function tests to normal.

The second biopsy of the liver was performed on the seventy-second day of illness and the twenty-seventh day of cortisone therapy. It revealed postnecrotic scarring and fatty metamorphosis. The latter is rare in the course of viral hepatitis and probably resulted from steroid therapy. Treatment with cortisone was extended

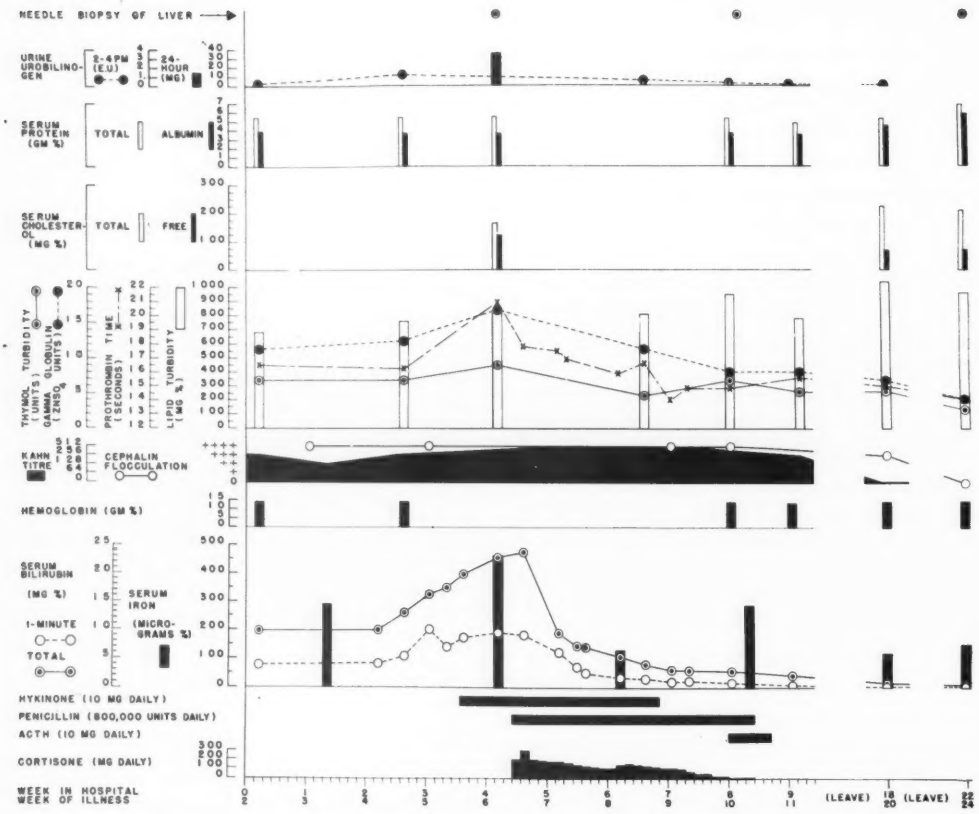

Figure 1. Summary chart of pertinent laboratory findings in a patient with severe hepatitis (IH). Note prompt decrease in serum bilirubin following institution of cortisone therapy.[1]

over a period of twenty-eight days; during the withdrawal phase small doses of ACTH were administered.

A month of therapeutic leave resulted in neither a recrudescence of symptoms nor deterioration in liver function tests; therefore, the patient was discharged from the hospital. The third biopsy of the liver was performed one hundred and sixty-eight days after the onset of the illness and revealed essentially normal tissue. At last report the patient was actively pursuing his occupation without apparent residual effects of his disease.

References

1. Christian, E. R.: Hospital management of hepatitis, J. Louisiana State Med. Soc. 107:8, 1955.

Diagnostic Problems in Pulmonary Diseases*

• The differential diagnosis of pulmonary disease is often difficult. The more important procedures used in diagnosis are discussed, and nine case reports are cited.

DWIGHT S. DANBURG, M. D.
JACOB FAUST, M. D.
JESSE L. FAIRCHILD, M. D.
DENNIS PORCH, M. D.
Greenwell Springs

A PRESENTATION of the most common diagnostic problems relative to the diagnosis of pulmonary disease is being offered and an attempt is made to clarify some of the accepted procedures which aid in such diagnosis. A group of cases each illustrating a certain pertinent point will be included. Emphasis is placed upon the fact that no original research is presented in this paper but rather that it is a survey of the present methods and practices.

All these patients were admitted to the Greenwell Springs Tuberculosis Hospital with a presumptive diagnosis of active pulmonary tuberculosis. They were referred by either the respective local health units or private physicians. In the great majority of cases x-rays were diagnostic and sputa positive. However, in a smaller group, there were only suspicious roentgenologic changes and sputa were negative. Therefore, it is extremely important that specific diagnostic procedures be carried out accurately and as promptly as possible. In other words, the burden of proof at this particular interval must rest upon the assumption that this represents a case of active pulmonary tuberculosis.

One assumes that a very careful and detailed history and physical examination, including routine laboratory procedures, has been completed. Considerable information which may contribute to the diagnosis may be obtained by considering familial history, industrial contacts and careful questioning as to what geographical areas may have been inhabited. In addition, certain diagnostic procedures are used in making differential diagnosis in pulmonary diseases and the more important will be discussed.

I. Skin Testing

The intradermal tuberculin test—The value of the tuberculin test in the diagnosis of pulmonary disease increases year by year as fewer persons are exposed to tuberculous infection. It, therefore, becomes more important to understand the limitations of the test to allow better application and use. In general, a negative skin reaction to 1 to 100 OT or PPD No. 2 is believed to exclude the presence of active tuberculosis.

In reviewing the literature on this subject several factors become evident.

A tuberculin reaction signifies in general only that the person has been infected at some time with tubercle bacilli.[1] Correlation of activity of the disease process with the severity of tuberculin reaction does not seem to be justified.

Furcolow and associates[2] found that 99.6 per cent of 468 tuberculous patients have skin reactions to PPD No. 2 or less and that no patients had complete anergy.

In the study by Lester and Atwell[3] the primary interest has been in the use of tuberculin as a diagnostic test. Although one realizes that skin reactions to low doses of tuberculin occur in patients ill with tuberculosis, in the group of 624 tuberculous patients a tuberculin skin reaction would not have been ob-

* Presented at the Seventh-ninth Annual Meeting of the Louisiana State Medical Society, in New Orleans, May 5, 1959.

tained in 21.7 per cent of the patients had only first strength been used. Eight per cent, (50 patients), of the group would have been designated as non-reactors if second strength PPD had not been employed. It is interesting to know that of the 4 patients who were non-reactors to all concentrations of PPD and OT, all had overwhelming infection and were moribund at the time of admission to the hospital. All of the patients became reactors within two months after institution of antituberculosis drug therapy. Another important factor that must be considered in the tuberculin test is the stability of the tuberculin reaction.

Kunofsky and Katz [4] studied a group of patients who were tuberculin retested over a considerable period of time. It was found that the tuberculin reaction was quite unstable and often disappeared. One factor contributing to this was the degree of exposure of tuberculous infection. Tuberculin conversions tended to increase and reversions decrease with increase in exposure. It is also assumed that a positive tuberculin reaction does not usually occur under a six week's incubation period following initial exposure to tuberculosis.

One concludes from the studies of Palitz and Aronsohn [5] that the low level or absence of tuberculin allergy commonly observed in the aged is the manifestation of deficiency of antigenic stimulus rather than of abnormal immunologic and physiologic responsiveness.

The remark is often made that the potency of the various lots of purified protein derivative is variable and for this reason inconsistent results can be obtained. Studies performed by the Veterans Administration Hospitals in evaluating various lots of PPD No. 2 revealed that of all lots available, reliable and consistent results were observed in all cases. There is a form of PPD classified as PPD-S which is considered to be the most pure but is not yet commercially available.

In a study by Allen [6] et al, of a series of 1,295 consecutive hospital admissions the most common errors of skin testing were found to be: (1) the use of outdated material, (2) failure to refrigerate the material after mixing, (3) use of too dilute solutions, and (4) failure to inject material intradermally.

Other skin testing materials such as blastomycin, coccidioidin and histoplasmin are used routinely as a portion of a battery of skin tests applied on all patients with an undiagnosed pulmonary lesion. The reliability of these tests has been questioned by some authors; however, it is the consensus of most that these are of some definite value particularly when supported by positive serology and complement fixation tests in those patients whose skin tests are reported to be positive.

II. Sputum Examinations

It has been stressed by others that if tubercle bacilli are to be recovered, repeated and adequate sputum specimens must be collected after eliminating as many mouth organisms, yeast, and saprophytes as possible. The usual methods of concentration with 4 per cent sodium-hydroxide solution and culture with modification of Lowenstein's and Petragnani's media is commonly used in the further isolation of the acid fast bacilli. Buddings' egg yolk media is used in some laboratories with very successful results and faster growth of the tubercle bacilli; however we have had no experience with this media in our laboratory.

In the majority of cases no difficulty is experienced in isolating the tubercle bacilli from patients whose sputum had been reported positive for acid fast bacilli prior to admission. However, occasionally, one is unable to confirm such positive sputa and this is of particular importance when there are very minimal changes observed to be present in the chest x-ray. It is a known fact that in patients treated with the anti-tuberculosis drugs occasionally there may be adequate concentration of the drug in the sputum to interfere with the cultural growth of the tubercle bacilli. This is

not usually the case if the patient is treated a comparatively short period of time, such as seven to ten days prior to admission. Occasionally, the presence of pyorrhea causes the presence of other acid fast rods which may be seen on concentrate smear but are yet negative on culture. Sometimes one encounters a laboratory contaminant such as the hay bacillus or similar acid fast organisms which may be present within nonsterile water.

Gastric lavage is also employed in those individuals who are unable to raise sufficient amounts of sputum for bacteriological examination and it should be noted that a concentrate smear of this material is usually meaningless and in all cases no confirmatory diagnosis can be established bacteriologically until cultures have been reported from the lavage material.

Another valuable source of sputum is by means of bronchoscopy. In a study conducted by Laforet and Strieder[7] it was found that the sputum produced following bronchoscopy was a more fruitful source of positive bacteriological data than was the secretion aspirated at the time of bronchoscopy. It was also observed that the bacteriological negativity of both the bronchoscopic aspirate and post-bronchoscopy sputum proved of considerable prognostic import since such patients rarely became infectious during the period of subsequent observation in the hospital. This is considered of extreme importance inasmuch as bronchoscopy is very often used in establishment of a definite diagnosis of an unknown pulmonary disease process.

In studying the cultural characteristics of tubercle bacilli, one must consider the atypical acid fast bacilli which are occasionally isolated from the sputum. This cultural growth oftentimes take on the orange or yellow colorations rather than the usual cream-colored cultural growth of the normal tubercle bacillus and some will only grow in high carbon dioxide concentrations. One is also impressed by the fact that perhaps there has been change in the metabolism of the tubercle bacillus after the institution of chemotherapy. In some instances a prolonged incubation period beyond the usual six or eight weeks is necessary and one does occasionally observe that a sputum may be positive on concentrate smear then reported negative on culture and yet positive by guinea pig inoculation from the material of the original specimen.

It is a common practice to inoculate a guinea pig with all atypical cultural growths of AFB as well as any isolated positive culture on a patient whose sputum has been persistently negative on smear and culture for AFB. In other areas where greater facilities are available other animals such as white mice and hamsters have been used to demonstrate the development of a tuberculous infection in these animals when it was found to be absent in the guinea pig.

III. Pleural Effusion

In cases of pleural effusions, aspirations followed by smear, culture and guinea pig inoculation have continued to be the accepted procedure. During the past several years pleural biopsy has been more commonly practiced with several techniques being developed for obtaining this pathologic information about the diseased pleura.

The needle biopsy, using the Vim-Silverman needle, has the advantage of simplicity. It can be performed as a simplified surgical procedure, however, it is helpful if there is fluid present at the time of biopsy; tissue fragments obtained are small and occasionally multiple punctures must be made to obtain specimens for bacteriological examinations.

In a study by Hill et al[8] an attempt was made to analyze the tuberculous cases with regard to optimal time for biopsy but this was inconclusive, as diagnostic tissue was obtained as early as one month after the onset of pleurisy and as late as nine months, with no particular pattern of a positive result having been determined. It is emphasized

that the finding of a non-specific inflammation or non-inflammatory tissue cannot be used to exclude the presence of tuberculosis. However, this technique may be of value in occasionally establishing a diagnosis of neoplasm or non-tuberculous inflammatory disease which would aid considerably in the differential diagnosis.

IV. Scalene Node Biopsy

This procedure is commonly accepted in attempting to establish a definite diagnosis of an undiagnosed pulmonary lesion. In our experience this particular examination has been very productive in establishing a diagnosis of sarcoid. Others have used a needle biopsy of the node and do not feel that this procedure is as highly productive of positive results as in a scalene node biopsy. It should be noted that in a review by Scott[9] of 160 consecutive scalene node biopsies 87 per cent, or 13 of 15 cases, were reported positive nodes in cases diagnosed as Boeck's sarcoid. In silicosis the percentage of positive nodes was 57.5 per cent and in lymphomas 50 per cent. Carcinoma of the esophagus was 33 per cent and tuberculosis 14.3 per cent. In 64 cases of pulmonary carcinoma 15.6 per cent of the nodes examined were positive; whereas in bronchoscopy at biopsy positive diagnosis was in 34.4 per cent. Therefore, one concludes that the scalene lymph node biopsy is a valuable diagnostic adjunct; positive results will be more easily obtained in cases of hilar adenopathy or diffuse bilateral pulmonary infiltration.

It should be noted that positive findings in biopsy material must be interpreted along with the clinical findings and also that granulomatous lesions are not always sufficiently specific to resolve a doubtful diagnosis.

V. Lung Biopsy

This procedure is merely being mentioned for completeness of diagnostic work-up but is one that is being used with increased frequency particularly in cases of undiagnosed lesions of unknown etiology and particularly when the question of insurance compensation may develop. However one should not exclude other routine diagnostic procedures and go directly to lung biopsy as this does constitute a fairly formidable surgical procedure.

Case Reports

Cose No. 1—E. L. Sarcoid. Admitted February 28, 1955. Negative sputum, negative tuberculin test, negative PPD#1 and PPD#2. Scalene Node positive for Boeck's sarcoid on March 15, 1955. Has been followed in this out-patient clinic to-date.

Case No. 2—M. L. For advanced pulmonary tuberculosis. Admitted November 18, 1957. PPD #1 positive, sputa negative. One sputum reported positive on smear November 21, 1957, and one organism seen which was negative on culture. Scalene node biopsy done was negative. Bronchogram revealed contraction of left upper lobe with saccular bronchiectasis. Lung biopsy performed and revealed evidence of pulmonary tuberculosis. One day after the performance of the lung biopsy positive culture of a specimen of May 6, 1958 was reported on July 30, 1958.

Case No. 3—A. W. Pulmonary Histoplasmosis. Admitted April 12, 1957. Negative sputum. PPD #2 positive and histoplasmin positive. Placed on anti-tuberculosis treatment April 15, 1957. Scalene node negative. On October 15, 1957, had left posterior segmental resection; grossly was compatible with fibrocaseous tuberculosis with cavitation. Cultures reported by pathologist October 15, 1957. Had left posterior segmental resection. Grossly specimen was compatible with fibrocaseous tuberculosis with cavitation. Culture reported by pathologist as positive for histoplasmin capsulatum. Patient discharged as a transfer to New Orleans Charity Hospital for treatment with amphotericin B.

Case No. 4—W. P. Moderately advanced pulmonary tuberculosis. Admitted September 13, 1951 with sputum positive for AFB. Left upper lobe resected on January 28, 1952. Discharged August 8, 1952, followed elsewhere. Re-admitted with bronchogenic carcinoma, expired on September 25, 1954. Cause of death: Bronchogenic carcinoma with cerebral metastasis, pulmonary edema, hypostatic pneumonia and moderately advanced pulmonary tuberculosis arrested.

Case No. 5—J. H. Pulmonary abscess. Admitted March 20, 1958. Sputa negative for AFB. PPD #2 positive. Placed on penicillin therapy. Bronchoscopy negative, Papanicolaou smears negative. Bacteriology of sputa: gram positive cocci rods. Discharged to private doctor on June 12, 1958.

Case No. 6—J. S. Pulmonary histoplasmosis. Admitted Ruston TB Hospital July 1955, discharged April 18, 1956. All sputa negative. Gastric smear positive but negative on culture. Readmission to Ruston in January 1958, because of unfavorable x-ray changes, all sputa negative. Transferred to Greenwell Springs on May 21, 1958. Sputa negative, PPD#2 positive, histoplasmin strongly positive. A serological histoplasmin test reported titer of 1 to 8 in yeast phase of complement fixation. Discharged September 11, 1958.

Case No. 7—P. S. Far advanced pulmonary tuberculosis. Long history of active pulmonary tuberculosis dating back to March 15, 1950. Resection contraindicated because of limited pulmonary function. Sputum negative for AFB on concentrate smear and culture since November 3, 1954 even though x-rays revealed extensive fibrocavitary disease in entire right lung.

Case No. 8—N. Pulmonary tuberculosis.

Case No. 9—H. B. Carcinoma of right lung. Possible tuberculosis, left lung.

Conclusion

In conclusion, a summary of the more common diagnostic procedures used in the differential diagnosis of pulmonary diseases has been included.

In addition, advantages and disadvantages of these procedures has been pointed out.

A series of cases each illustrating specific practical points in diagnosis is included.

References

1. Mescher, W.: Tuberculin neg. tuberculosis, Amer. Rev. Tuberc. 63:501, 1957.

2. Furcolow, M. L., Hewell, B. and Nelson, W. E.: Quantitative Studies of the Tuberculin Reaction. Amer. Rev. Tuberc., 45:504, 1942.

3. Lester, Charles F. and Atwell, Robert J.: The Tuberculin Skin Reaction in Active Pulmonary Tuberculosis. Amer. Rev. Tuberc., 78:399, 1958.

4. Kunofsky, Solomon and Katz, Julius: Stability of the Tuberculin Reaction, Amer. Rev. Tuberc., 78:869, 1958.

5. Palitz, Leo S., and Aronsohn, M. H.: Tuberculin Sensitivity in the Aged, Amer. Rev. Tuberc., 75:461, 1957.

6. Allen, Albert et al.: Accuracy of the Confirmatory Diagnosis of Tuberculosis, Amer. J. Med., 22:905, 1957.

7. Laforet, Eugene G., and Streider, John W.: Sputum Examination Following Bronchoscopy, Amer. Rev. Tuberc., 77:716, 1958.

8. Hill, Harry E. et al.: Pleural Biopsy in Diagnosis of Effusions. Amer. Rev. Tuberc., 78:8, 1958.

9. Scott, Stewart M.: A Critical Review of 160 Consecutive Scalene Node Biopsies, Rev. Tuberc., 76: Amer. 1002, 1957.

UNIVERSITY OF LOUISIANA CLINICAL INSTRUCTION

There is no great city in the world which can boast of an institution where the student sees every form of disease so unrestrictedly as in the Charity Hospital—where he can so familiarly look disease in the face. In Rome, Vienna, Paris, London, and other justly celebrated capitals famed for Medical Science and instruction, in Great Britain and in Continental Europe, the student, at a respectful distance, accompanies the Professor in his visits, listens to his speech, looks at the patients in bed arranged as tableaux. The Professor informs him of the condition of the pulse, the respiration, the temperature of the body, and of the signs and symptoms which occur during disease, and which the master observes. But the pupil cannot place his hand upon the patient; he cannot question him to satisfy his own mind; he is not permitted to speak aloud; and he is excluded from visiting patients except in the presence of his teachers.

In New Orleans the student can visit patients in the Charity Hospital from morning until night, and devote his talents and industry to the study of every disease in the wards. He can question and examine for himself.

New Orleans M. & S. J. 19:7 (July) 1866.

Preliminary Report on Librium,* A New Psychopharmacologic Agent

• Evaluation of a new drug which in early studies appears to be quite effective.

GENE L. USDIN, M. D.†
New Orleans

Introduction

THE advent of new psychopharmacologic drugs has produced dramatic changes in the practice of clinical psychiatry and has led to increased opportunities for further research in the field of cerebral function. The problem of the shortage of psychiatrists, together with the cost of psychiatric treatment, has been met to some extent by these drugs which have brought relief to many individuals who could not avail themselves of psychotherapy for financial reasons, distance from treatment centers, resistance to therapy because of pathological mental mechanisms or misguided notions concerning emotional or mental illness. Then, too, the efficacy of some of the more recent psychopharmacologic drugs has accented the interrelationship of the psyche and the soma and has made not only physicians but also laymen more aware of psychosomatic medicine. Pharmaceutical companies, stimulated by promising results, have directed increased research efforts to develop more effective drugs with fewer toxic or side effects. It is to be anticipated that pharmaceutical companies will continue to attempt to "leap-frog' each other in their effort to provide better means of dealing with man's tensions.

Psychiatrists in private practice are faced with a number of significant handicaps in evaluating drugs: they cannot accumulate the large number of cases readily available to the psychiatrist in institutional or public clinic practice. Secondly, private practice more frequently involves the urgent need to get the patient well as soon as possible; there is often greater pressure on the physician because of the patient's financial situation. Then, too, patients with whom drugs become one of the cardinal tools in the therapeutic process often have limited goals insofar as basic personality changes are concerned. Many individuals, threatened by the concept of insight psychotherapy, desire only this limited goal —prompt relief of symptoms. The psychiatrist in private practice has both the need and responsibility principally to aid the patient as quickly as possible. Because of the need to achieve an early response, studies using placebos or double blind technics are usually not feasible. Also, there is a real question whether or not the present vogue of double blind studies is being overdone.[1, 2] Even under ideal situations with numerous physicians prescribing drugs not known to them, the question of whether or not a double blind study can truly be "blind" is not fully answered.

A third problem in carrying out a scientifically designed drug study is that of securing laboratory tests as a check on toxic effects of medications. Physicians in academic and institutional positions can, as a rule, freely order electroencephalograms, liver function tests, hemograms, etc. Also, nonpaying patients are usually more willing to cooperate in tests that might not be fully necessary for their over-all treatment.

This paper concerns one of the newest

---

* Trade name for methaminodiazepoxide, Hoffmann-La Roche, Inc., Nutley, N. J.

† From the Departments of Psychiatry of Touro Infirmary and the Tulane School of Medicine, New Orleans.

drugs in the psychopharmacologic field, namely, Librium (methaminodiazepoxide) which has proved extremely effective in the author's private practice. Shortly after the first good results were observed, utilizing the confidence obtained, the author explained to patients that this was one of the newest drugs and that he had found it exceedingly effective. Many physicians can find much to criticize in this technic of evaluating a drug. It must be granted that it leaves a good deal to the physician's subjective judgment. Is the patient's improvement greater on this drug than if placebos, some other drug or no drug had been used? The author recognized the aforementioned limitations to a thoroughgoing appraisal of the drug under study.

Randall's studies [3] emphasized that Librium not only calms laboratory animals but exerts a taming action, converting wild monkeys into pets. He further reported that while Librium had the tranquilizing properties of chlorpromazine and reserpine, it lacked their autonomic blocking effects. Compared with meprobamate it was more potent as a muscle relaxant; its anticonvulsant effects were not associated with induction of hypnosis.

Published reports of clinical trials in internal medicine, dermatology, as well as in a variety of psychiatric disorders [4-6] have emphasized its alleviating effects especially in anxiety, tension, and depression accompanied by agitation. Especially encouraging have been the results reporting few and extremely mild side effects all of which were reversed by discontinuance of the drug or reduction in the dosage. According to the manufacturers of the drug, investigation by about 3,000 clinicians with 40,000 patients in the course of a year has revealed no case of jaundice, blood dyscrasia, hepatic pathology, hypotension, or other serious adverse reaction.

Materials and Methods

The author's experience with the use of Librium here reported is based on seven months' observations. A total of 80 patients (48 female and 32 male), ranging in age from 17 to 74 years comprised the study. The longest period that any patient was on the drug was six months. All, except 7 patients, who were followed in the Psychiatric Clinic of Touro Infirmary, were seen in private practice. Some of the patients were under psychotherapy prior to the initiation of the drug and have been continued in psychotherapy while on the medication. Others were seen for only two or three visits and were referred back to the family physician with suggestions. Many of the patients had been on other medications prior to the initiation of Librium, and 15 had been hospitalized at the time they first received the drug. A further difficulty affecting a more precise evaluation of improvement was the fact that many of the patients were continued in psychotherapy. Twelve patients, with some degree of depression being one of the symptoms, were receiving a monoamine oxidase inhibitor or amphetamine compound concurrently. This factor was not carefully correlated, but apparently the concurrent use of amphetamine or monoamine oxidase inhibitor compounds made no significant variation in results obtained.

Patients in this study presented a diversified list of symptoms, and overlapping symptomatology in different diagnostic categories constituted a problem. It was decided to group patients primarily by the predominant presenting symptoms rather than by basic psychopathologic entity. Many included under the psychoneurotic classification also had some psychophysiologic disorders. The major portion (46) fell into the diagnostic category of psychoneurosis, which included all types of neurotic symptoms, although phobic and anxiety reactions were predominant. Five of these 46 patients were believed to be pseudoneurotic schizophrenics although it is conceivable that another clinician might object to this diagnostic label when no overt or flagrant manifestation of psychotic ideation is present. Five of the psychoneu-

rotic patients exhibiting conversion reactions were involved in legal litigation wherein maintenance of their symptomatology could result in significant secondary gain.

The remaining 34 patients included senile anxiety states, sociopathic personality disturbances with anxiety, psychophysiologic reactions, depressive phase of manic depressive reactions, transient situational personality disorders, paranoid reactions with anxiety, and alcoholic intoxication. The classifications and results of treatment are shown in Table 1.

Criteria for improvement were: Either the drug produced so great a relief of symptoms that trial with another medication did not appear warranted, or else Librium produced greater relief of symptoms than any medication previously used. In some instances wherein Librium proved effective, it was temporarily replaced with another tranquilizer or psychosedative; if Librium seemed to produce the greatest improvement it was reinstituted.

Early in the study the starting dosage was 25 mg. three times daily, but later the initial dosage was usually 20 mg. three times a day. Occasionally this had to be increased to 75 mg. daily, but more frequently the dose was reduced to 30 mg. daily. Unlike one investigator[7] who found 5 mg. ineffective, this investigator found that 2 patients with anxiety symptoms were significantly aided by 5 mg. three times daily.

Results

The drug's most striking effect was the lessening of anxiety and tension. The onset of effect was often prompt, some patients reporting significant relief in thirty minutes.

Of the 46 patients who exhibited primarily psychoneurotic symptomatology, 36 showed improvement with Librium that was significant or superior to any other medication. Results in this as well as in other categories can be seen in Table 1. The percentage of response in the psychoneurotic group appears more significant when it is noted that only two of the 5 patients wherein legal litigation was pending concerning a possible neurosis showed significant improvement.

TABLE 1
RESULTS OBTAINED IN PATIENTS WITH LIBRIUM

Indication	Total	Number of patients improved	Unimproved
Psychoneurotic symptomatology (phobic, conversion, anxiety, depressive, dissociative, mixed, etc.)	46	36	10
Psychophysiologic disorder			
a. cardiovascular	1	1	
b. gastrointestinal	5	4	1
Transient situational personality disorder *	5	4	1
Sociopathic personality *	4	2	2
Narcotic addiction	1	1	
Alcoholic withdrawal	5	4 †	1
Paranoid personality *	5	2	3
Depressive phase of manic depressive psychosis	3		3
Toxic psychosis associated with burns	1	1 †	
Post-cerebrovascular disorder *	1	1	
Agitation in chronic brain syndrome (cerebral arteriosclerosis)	3	0	3
TOTALS	80	56	24
		70%	30%

* Anxiety was primary presenting symptom.

† Question arises as to whether other drugs together with good medical management and anticipated recuperative processes of body might have resulted in equal improvement.

The following case histories exemplify some of the good responses that appeared especially significant:

Case No. 1.—A thirty-four-old housewife who initially was started on 75 mg. daily because of depression and severe anxiety symptoms. What is significant about this particular case is that she had not responded initially to psychotherapy, but moderately to a course of electroshock therapy and had continued to be inaccessible to psychotherapy. With the initiation of Librium, there was a marked response, and the patient was discharged from the hospital within a week. She has been able to work well in psychotherapy and is being seen biweekly in office psychotherapy. A few weeks after she was discharged from the hospital, she did not take her medication for two days, and there was a mild to moderate exacerbation of her anxiety and depressive symptomatology. Subsequently it has been possible to reduce the dosage of Librium to less than half of the starting dosage. This patient has now been on the drug for six months. Because of the strides made in psychotherapy, it is anticipated that she will be able to discontinue the drug shortly.

Case No. 2.—A 42-year-old, out-of-state general practitioner who had been hospitalized on several occasions because of narcotic addiction. He reported that the adjunct of Librium provided him with the mildest withdrawal period that he had ever experienced.

Case No. 3.—A 46-year-old successful businessman who has had essential hypertension for the past ten to fifteen years. His hypertension has been labile, and psychogenic factors have been prominent. He also has a problem with alcoholism and falls into the diagnostic category of sociopathic personality. He is a tense individual, but with the initiation of Librium there was a marked reduction in his tension and his blood pressure dropped to normal level. He takes the entire gamut of antihypertensive drugs, but also was taking them prior to the drop in his blood pressure.

Case No. 4.—A 56-year-old laborer who was involved in personal injury litigation and was diagnosed as having a conversion type of psychoneurosis. Librium was initiated and he not only noted marked diminution in his general anxiety, but also a decrease in back and lower extremity pains. He did complain of sexual impotency for two weeks after initiating the drug. But as he continued Librium not only did his potency return, but also, the tension and pain remained markedly diminished.

Case No. 5.—This is a 17-year-old primigravida woman with a lifelong history of a dissociative phenomenon that bordered on depersonalization. Her mother reported that the delivery of the patient was difficult and her physician considered that the patient had a "mild" birth injury. The patient was extremely tense and anxious when first seen. With the initiation of Librium, not only was there a good response insofar as the anxiety and tension was concerned, but also the dissociative phenomenon ceased. An electroencephalogram on September 22, 1959 (prior to the initiation of Librium) was reported as abnormal. Asymmetries of frequency and amplitude and background delta and theta frequencies in the occipital regions were noted. A subsequent electroencephalogram on February 18, 1960 (after the patient had been on Librium for nearly 5 months) revealed a reduction in the amount of background delta and theta activity, better hemispheric symmetry, and generally better stability of frequency and amplitude in the occipital areas.

Side Effects

The most frequent side effect encountered with Librium was that of lethargy which included drowsiness and fatigue; this symptom was present in varying degrees in 15 of the 80 cases and was associated with ataxia in 3 cases. The drug apparently may have cumulative effects. Four patients who were on 75 mg. daily became markedly somnolent for twelve to eighteen hours on about the second or third day of medication. This was readily reversible with temporary discontinuance of the drug. Five patients had ataxia; two of them had experienced no improvement and, therefore, did not wish to continue the medication even at a reduced dosage; the other three were able to tolerate the drug in smaller doses, but in only one of the three was there a satisfactory response to the medication. Many of the patients reported increased appetite and weight gain. Four patients, who had nausea as one of many symptoms, reported relief of the nausea. On the other hand, two patients (one of whom was four months pregnant and had previously been troubled with nausea) complained of the onset of nausea. Two patients, both hospitalized and semi-ambulatory, became constipated. However, it is interesting that several patients noted improved bowel habits while using Librium. One man complained of impotency, but this disappeared after two weeks even though the drug was continued. (Refer to Table 2 regarding side effects.)

TABLE 2
SIDE EFFECTS

	Incidence	Comments
Drowsiness	15	It was possible to continue on a reduced dosage in the majority.
Ataxia	5	
Nausea	2	1 of these was pregnant and experienced nausea during the first 4 mos.
Constipation	2	Both patients were hospitalized and semiambulatory.
Impotence	1	For two weeks after initiating therapy.

Discussion

The series of cases in this study is small and the author makes no pretense of its being controlled. Likewise, the period during which Librium has been used is limited (seven months) so that final conclusion concerning its place in therapy is as yet not warranted. It is a drug that apparently has a relatively wide range of dosage insofar as efficacy is concerned. Accordingly, some investigators might use 30 mg. while more daring ones might use 75 mg. as their basic dosage.

Results at this time appear to be extremely encouraging; it seems to be the most effective drug yet encountered in the treatment of anxiety, tension and phobic reactions. The lessening of anxiety and tension appears to be Librium's cardinal use at this time. It often does this without clouding consciousness or impairing intellectual function. Because of the side effect of lethargy or drowsiness, the statement that the drug does not cloud consciousness or impair intellectual function is open to question. Possibly this is a disagreement in semantics, but does not drowsiness in significant degree also cloud consciousness and impair intelligence? It would seem that a more appropriate statement would be that in proper dosage the drug can most often produce a diminution of anxiety and agitation without the side effect of significant lethargy.

Preliminary results of Librium's applicability to psychosis and personality disorders are promising, and the results in pseudoneurotic schizophrenics have been surprisingly good.

In two cases significant improvement occurred early, but the drug appeared later to lose its effectiveness.

The problem of evaluating side effects in early studies with any drug is a most difficult one. Factors to be considered are the setting in which the drug is used, the specific personality of the patient, his information regarding the drug and its side effects, the attitude and explanation of the prescribing physician as well as many other factors. No serious adverse effects have been encountered with the use of Librium. Some investigators [4] noted a stimulating effect with the use of Librium, but the occurrence of a pathological degree of stimulation was not striking in this study. As with many patients who have anxiety, diminution of that anxiety or relief from tension may produce a feeling of well-being, ability to participate in outside activities and ability to relate more and better. The pain-pleasure principle of anxiety and tension (or rebound phenomenon) should be kept in mind in this regard.

Librium, like the other tranquilizers or psychosedatives, is a symptomatic drug. Relief of symptoms is sufficient in some patients, but physicians should bear in mind that Librium does not cure underlying personality conflicts. When effective, it may make the patient more accessible to effective psychotherapy.

Summary

Librium (methaminodiazepoxide) a new psychopharmacologic agent was evaluated in 80 patients with a diversified group of symptoms.

Anxiety, tension and agitation — the predominant symptoms—were relieved in 70 per cent of the patients who had either been totally or partially unresponsive to other tranquilizers or else had not

taken tranquilizers previously. No serious adverse or irreversible side effects were found.

Librium appears to be a most unusual drug and promises to be a valuable addition to the physician's chemotherapeutic aids. It must be borne in mind that what is helpful to one patient may exacerbate symptoms in another. With the numerous tranquilizers that have been developed in recent years, it behooves the physician to try different medications when one medication does not work. He should keep in mind that one drug, which has been effective in 80 to 90 per cent of a certain type of condition, may not help a specific patient; whereas a drug which has been effective in but 20 to 30 per cent of the same condition may be extremely effective. While Librium is an important addition, there is no reason to believe that it is the final pharmacologic agent in the treatment of emotional or mental illness.

References

1 Baker, A. A. and Thorpe, J. G.: Placebo response. Arch. Neurol. and Psychiat. 78:57-60 (July) 1957.

2. Tuteur, W.: The "double blind" method: Its pitfalls and fallacies. Am. J. Psychiat. 114:921-922 (April) 1958.

3. Randall, L. O.: Pharmacology of methaminodiazepoxide, Dis. Nerv. System 21:Sect. 2, 7-10 (March) 1960.

4. Supplement, Dis. Nerv. System, 21:Sect. 2, 3-60 (March) 1960.

5. English, D. C.: Librium, a new non-sedative neuroleptic drug: A clinical evaluation, Cur. Therap. Res. 2:88 (March) 1960.

6. Harris, T. H.: Methaminodizepoxide, J.A.M.A., 172: 1162-1163 (Mar. 12) 1960.

7. Bowes, H. A.: The role of Librium in an outpatient psychiatric setting. Dis. Nerv. System 21:Sect. 2, 20-22 (March) 1960.

HISTORICAL NOTES

A tendency to the reproduction of the intellectual, moral and physical traits of parents is universally admitted, and it is almost as generally granted that inherited defects are exaggerated in the offspring of blood relations; moreover, recent investigations go to prove that consanguinity in marriage, as an original cause, is adequate to the production of all the natural malformations, infirmities, and vices to which the human organism is subject. It is a happy circumstance for our race that infecundity of parents and early death of their offspring often attend these unions.

As a result of close intermarriage among the nobility of France and Spain, writers at the close of the seventeenth century remarked: "In Spain, when a Grandee of that nation was announced in a saloon, they expected to see enter a sort of abortion." In France, it was said: "In regarding the mass of men composing the high nobility of the State, one seemed to be in a society of invalids."

Herrick, S. S.: Marriages of Consanguinity, New Orleans M. & S. J. 19:48 (July) 1866.

A Psychiatrist Looks at Medical Hypnosis*

• The author is convinced that hypnosis is more than just a fad. He believes that although its use is not without dangers, due to ignorance of the contraindications, hypnosis is an adjunctive treatment to be employed by general physicians and nonpsychiatric specialists after proper training.

RUSSELL R. MONROE, M. D.†
New Orleans

THERE are probably some six thousand physicians and at least an equal number of dentists now using hypnosis in their practices. Such sudden popularity of this old but until recently all-but-forgotten technique prompted the Council on Mental Health of the American Medical Association to issue a report on the medical use of hypnosis.[1] In substance, the Council report states that

> " . . . there are definite and proper uses of hypnosis in medical and dental practice in the hands of those who are properly trained but that no physician or dentist should utilize hypnosis for purposes that are not related to his particular specialty and are beyond the range of his ordinary competence."

I would interpret this to mean that the physician's goals with hypnosis should be no more than he would attempt in the waking state while practicing his particular specialty. On the other hand, the Council points out that the training facilities for medical hypnosis are almost completely lacking. It also mentions that even experts disagree as to the possible dangers inherent in hypnosis.

Potential Dangers

It seems to the author axiomatic that any medicine or medical procedure that can be good for the patient might also be bad. Anyone who has observed the hypnotic trance is aware of the intense suggestibility and increased cooperation of the subject. Despite protests to the contrary, such increased cooperation might under certain circumstances be exploited by the unethical. A simple demonstration of this observed by the author was an Army sergeant hospitalized because of an acute anxiety reaction following long combat experience. He was an apt hypnotic subject, easily obtaining a deep, somnambulistic trance. With suggestion, he returned to the battlefield of some months before. It was then further suggested that the next person he saw would be an enemy soldier approaching with fixed bayonet. It took several men to restrain the subject from killing his imagined assailant, even though this assailant was a medical aide whom the patient knew quite well and would not think of attacking under other circumstances. This hypersuggestibility in itself is reason enough to discourage stage hypnosis or parlor games involving a hypnotic trance. Unfortunately, trance induction is such a simple technique that our only hope for control is to establish hypnosis as a medical procedure through education of the laity.

Apart from this, it is the author's contention that hypnosis, even in the hands of the sincere, ethical but untrained physician, is potentially dangerous. It seems to me that the psychiatrist must point out such dangers through publicizing his personal experiences and that medical educators must establish comprehensive post-graduate training in induction techniques, patient selection, and therapy with close clinical supervision.

---

* Presented to the Central Neuropsychiatric Association, New Orleans, Louisiana, October 17, 1959.

† Associate Professor of Psychiatry, Tulane University School of Medicine, New Orleans.

Case Reports

Below are some examples of what could have been serious complications following the inept use of hypnosis, as well as other case illustrations of proper patient selection and use of hypnotherapy. I hope this will offer some guides which will minimize the dangers of hypnosis, as well as establish principles for selecting patients and for determining the level of competency of physicians.

A twenty-five-year-old wife of an Army sergeant returned to her dentist following a tooth extraction with "lock jaw." The dentist put her into a moderately deep hypnotic trance and suggested that she could now open her mouth, which she did without effort. He then gave the post-hypnotic suggestion that, when she awakened, she would be able to move her jaw normally. When this proved to be true, she seemed elated and grateful. However, late that evening she was seen in the emergency room in a deep coma, following an overdose of barbiturates. When finally revived, she sobbingly related this story. Her husband, who had been overseas for several years, was to return the following week. She reluctantly admitted that during his absence she had been having an affair and was now two months pregnant. It is obvious that this girl's symptoms were a bid for help and that a more permissive suggestion of symptom removal or allowing the patient to talk about her problems might have avoided what could have been a fatal complication.

Another example is a thirty-five-year-old Army private who had been incarcerated for six months on a three-year sentence for AWOL. He was referred to the psychiatrist for a hysterical right hemiparesis and hemianesthesia. He was easily hypnotized; and, over a period of three sessions, both the hemiparesis and hemianesthesia disappeared under direct command. Despite the fact that he seemed grateful for his improvement, several days later he complained of acute claustrophobia. Again, a hypnotic state was induced; and, again, using a command technique, the claustrophobia disappeared. Some days later, the patient developed an acute panic reaction with a tachycardia and cardiac arrhythmia which necessitated hospitalization. Again, hypnosis with a command technique for relaxation was instituted. Although the present symptoms were much more resistant to hypnotic therapy, in time they too disappeared, only to be replaced by severe neurodermatitis. By this time, the patient's therapist had elicited information suggesting extenuating circumstances for his offense, which was later confirmed by further investigation. The patient received an extensive remission of his sentence with concurrent disappearance of his psychosomatic skin disorder.

This is an example where the command technique, without getting at the basic problem, elicited shifts in the defensive symtpoms—each one becoming more severe. Permanent symptom removal was only obtained by working out the patient's obvious situational problem.

A third example is that of an adolescent boy, hospitalized with amnesia. Under hypnosis, his memory returned and the precipitating conflict was identified. This turned out to be an impending operation for hypospadias, which was very frightening to this childish, schizoid individual with his many hypochondrical preoccupations. He remained in the hospital until after his operation, continuing to receive reassurance psychotherapy. Because he was such an exceptional hypnotic subject, he was used on a number of occasions as a subject for demonstrations to residents and students.

In the waking state, he had a complete amnesia for the hypnotic experience. In fact, he did not even realize that he had ever been hypnotized. Under hypnosis, the demonstrator would dramatize hypnotically-induced hallucinations by suggesting to the patient that upon a cue he would be able to see through all manner of cloth and clothing. The blushing and embarrassment of the patient as he looked at a mixed audience was dramatic evidence of the validity of such hallucinations. It time it become obvious that the afternoon following such demonstrations the patient would act out some impulse on the ward. He had only a superficial rationalization for these actions, which were quite out of character for this rather passive, ingratiating individual. When this was realized, the patient was questioned under hypnosis about his feelings regarding the hypnotic demonstrations. Although in the waking state he always protested that he did not mind being interviewed by the students, under hypnosis he suddenly expressed intense resentment, shouting, "Why do you always embarrass me under hypnosis?" Again, in the waking state immediately afterwards, he had no memory of this—in fact, denied again that he had ever been hypnotized. This emphasizes the need, even under the deepest hypnosis, to treat your patient with all the caution and respect you would in the waking state. It also illustrates the well known observation that the experiences one undergoes under hypnosis, even if not recalled afterward, do have a profound influence on subsequent behavior which might be self-destructive.

Another example of an adverse reaction to hypnosis is that of a twenty-nine-year-old white male who was being treated with hypnosis for the control of chronic pain. He had had a right upper lobectomy for tuberculosis which left a

persistent pain, even after a unilateral rhizotomy of T-4 to T-8.

Phychiatric evaluation revealed an individual with both paranoid and masochistic tendencies, with the possibility of an underlying psychosis which might be precipitated by coercively removing his pain. It was decided, therefore, to treat him cautiously, focusing as much on total adjustment as on mere symptom removal. Being seen three times a week in hypnotherapeutic sessions, the patient showed rather dramatic immediate improvement. He was less preoccupied with his pain, began to socialize more freely and even talked about going back to work. However, unbeknown to the treating physician, the patient was reading about and practicing induction techniques. It was ultimately discovered that in several weeks he had become an expert on induction technique. His seeming improvement was due to a typical grandiose paranoid repair, inasmuch as he now could control his wife and friends through hypnosis. The treating physician cautiously, but firmly insisted that he either discontinue these practices or it would be necessary for the physician to stop therapy.

The next time he was seen, he was depressed, withdrawn, complaining of his pain again, and carrying a gun in his pocket—allegedly to shoot himself but, with his paranoid trends, the treating physician was not sure whether it might not be his surgeon or the physician himself. The patient was immediately and willingly hospitalized. However, in the hospital he rapidly decompensated until he was openly expressing a number of paranoid delusions.

This is an instance of the hypnotherapy precipitating a grandiose repair, dangerous to everybody in the environment, in a basically paranoid schizophrenic. Two other somewhat similar cases leave the author with the impression that paranoids are either poor hypnotic subjects or utilize hypnosis, as this patient did, to manipulate and control their environment.

Hypnosis as a Medical Aid

Fortunately, in most of these patients the damage done by hypnosis was not irreparable, the ultimate outcome being a happy one; but those examples do reveal what might have been serious complications under less fortunate circumstances. I believe that such possible complications should not inhibit our use of hypnosis, for many times it can be of service to the medical profession, if used by properly trained physicians who have had some clinical training under the supervision of experienced hypnotherapists. In view of this, the author and a group of his colleagues in the Department of Psychiatry at Tulane attempted a pilot course in medical hypnosis as an elective for fourth-year medical students during the academic year 1958-59. The instructors, students, and casual observers were all impressed as to how useful hypnosis can be, particularly as an adjunct to other therapies. Some examples are as follows:

An elderly man was recuperating from surgery but suffering from intractable hiccups. He had to take all fluids by vein and was having a decidedly stormy postoperative course. One of the medical students, under supervision, was able to induce a fair degree of relaxation. The hiccups were temporarily relieved but subsequently recurred. The student returned and repeated this procedure again with success. He then taught the patient self-hypnosis. The patient was able to obtain a light hypnotic trance. In this way, the patient could subsequently relieve his own bouts of hiccups. This was most impressive to the skeptical surgeons, who had consulted psychiatry as a last resort after everything else had failed.

Another example was a middle-aged colored male who was having plastic repair of his face requiring a pedicle transplant from his abdomen, which meant that he had to hold one arm in an awkward position for a period of from four to six weeks. The patient was approached with the idea of using hypnosis to help him maintain the difficult posture required by the procedure. He enthusiastically accepted our suggestion, and one week prior to surgery he was induced by the method of progressive relaxation, being easily deepened to a medium trance with hand levitation. The suggestion was given that he would be able to hold his right hand to his forehead with little or no effort. Posthypnotic suggestion was given by the use of his other arm, which—at the suggestion of the hypnotist—was stuck to his forehead. Neither the patient nor others could remove the arm from this position until he had been given the appropriate cue.

After the procedure, the patient was seen daily under hypnosis, and the suggestion of maintaining arm position without conscious effort was reinforced. If more than twenty-four hours elapsed between hypnotic sessions, the patient would complain of fatigue, tiredness, and aching of muscles. Immediately following the hypnotic suggestion, there was relaxation with relief of discomfort. When the pedicle was detached five weeks later and the signal given for the patient to lower his arm, he did so with some limitation of motion and tenderness in the joints, which rapidly disappeared under continued hypnotic suggestion and exercise.

Another patient was referred to the psychiatrist for trance induction in the hope that she might undergo a complete dental extraction without the use of drugs. She was allergic to narcotics, barbiturates, and analgesics. As she could obtain only a light to medium trance, it was suggested that the operation be done under nitrous oxide but that the hypnotherapist be utilized for presurgical and postsurgical care. The patient was seen the evening before the operation, with the induction of relaxation and sleep. The morning of the operation, instead of the usual pre-anesthetic medication, relaxation and drowsiness were induced. Following the operation, for the first twenty-four hours, relaxation and relief of pain were again suggested directly under hypnosis. This was sufficient to insure a smooth preoperative and postoperative course in a woman who was extremely anxious about the procedure.

Another patient was a sixty-four-year-old white female who had the terminal phalanx of the left thumb removed after a diagnosis of malignant melanoma. She had had a perfusion of the upper extremity with a nitrogen mustard compound. At the time of her referral, she was confined to her room because of severe pain throughout the left arm, accentuated in the amputated stump.

This patient went into a deep trance during the first session and reported no pain during the trance state. She subsequently reported an increase of six to eight hours' sleep in the following twenty-four-hour period. The pain was changed considerably during the next two sessions, with localization to the thumb and forearm. It was also suggested that she might feel well enough to go out of her room. Her first reaction was to reject this suggestion; but, after the sixth hypnotic session, therapy was discontinued because the patient reported only minor, intermittent discomfort located in her thumb. She was no longer confined to her room and now socialized freely.

The patients and procedures described above illustrate situations in which most physicians could utilize hypnosis as an adjunctive form of therapy with only minimal training in psychological medicine—that is, as much as is usually obtained in the undergraduate medical curriculum. In these instances, the goal was either relaxation, increased cooperation during medical procedures, alleviation of acute but specific real anxiety or the control of pain. The experience we had with these patients were most rewarding, particularly the ready acceptance of hypnosis by the other specialists—for instance, the surgeons, anesthesiologists, and dentists. It was our feeling that this also enhanced their sympathy for and understanding of psychological medicine.

Another patient requiring skin grafts, presented a similar problem to the one above. An attempt was made to induce hypnosis in this patient with a total lack of success. The surgeons questioned us as to why we could do this with one patient and not with another. We sat down with them and pointed out that this particular man had gone through a period of ten years of recurrent hospitalization for osteomyelitis. There had been many years of medical mismanagement. He had been shuttled from one doctor to another and now was so suspicious of all physicians that he could not trust us or anybody else without at least more prolonged contact. The surgeons readily understood this and could thereby see the hypnotic state as a manifestation of the doctor-patient relationship wherein the patient must have complete trust in his physician.

Inadequacy of Hypnosis

There is another group of patients who superficially appear similar to the above, but it soon becomes obvious that these patients need more than hypnosis. They require support, superficial guidance, or extensive rehabilitative planning as well.

A fifty-five-year-old colored female was referred for hypnosis because of a blood pressure of 215/100. There was a grade-3 systolic murmur at the apex of the heart. EKG, chest films, and other laboratory and physical findings were all within normal limits. When seen by the hypnotherapist, her blood pressure was only 150/90. In the first hypnotic session, during which she obtained a light trance, the pressure was 120/76. In the waking state, the patient was very anxious, wringing her hands before and after the hypnosis. Again, on her second visit, her blood pressure was elevated; and, after ten minutes of talking with the hypnotist without trance induction, the patient's blood pressure had returned to the normal range, although it fell a little more under hypnosis. While under hypnosis, the patient was told that she could easily control her blood pressure by relaxing but that her tension must reflect some problem. She immediately be-

gan talking about her husband's recent death and how she was now afraid of house-breakers and crowds, believing that someone wished to harm her. She spontaneously decided that all of these things must be increasing her blood pressure. Incipient psychosis was suspected; therefore, she was referred for brief psychotherapy, being seen once a week without hypnosis. There was no further observed elevation of her blood pressure.

Another example of this is a nine-year-old white male who was referred for hypnosis because of enuresis since the age of two-and-a-half. The patient appeared to be a rather small boy, extremely nervous and shy. He was imaginative and a very good hypnotic subject. It was suggested under hypnosis that he would relive the experience of wetting the bed in the therapist's office—that is, he would become very uncomfortable from a full bladder but would be able to awaken himself and go to the bathroom. He did this on each occasion. It was then suggested post-hypnotically that he would be able to do this at home.

After several sessions, he would go a week at a time without wetting the bed. However, it was learned that his family was extremely displeased with his bed-wetting and punished him rather severely by attempting to shame him into correcting this habit—for instance, insisting that he wear diapers at night. Probably more significant than the hypnosis itself were several counselling sessions with the family regarding the patient's difficulties and suggestions of better ways of handling his enuresis. It seems to me that the general physician or nonpsychiatric specialist could handle such problems as these after some post-graduate training in psychological medicine.

Again, there are patients whose problems are so complicated that they tax the ingenuity of even the most highly trained dynamic psychiatrists, although on the surface they might seem to be ideal candidates for medical hypnosis.

An example of this is a thirty-five-year-old single woman who holds a very responsible position as a departmental manager in an advertising agency. She had decided to use contact lenses but found that she could not tolerate them for more than a few minutes. It was hoped that hypnosis might increase her tolerance. She proved to be a good hypnotic subject, obtaining a moderate trance state. Practicing under hypnosis, she could insert and remove her lenses without difficulty and could tolerate them without irritation. Using post-hypnotic suggestion, she wore these for from ten to twelve hours each day and on weekends almost continuously. However, without continuous hypnotic reinforcement, she would immediately relapse, not wearing her contact lenses, particularly to the office.

She was finally seen in consultation by a psychiatrist, who after talking with her suspected that there was an underlying need for the patient to hang on to her frames. He also discovered that she was receiving psychotherapy. With her permission, he contacted her therapist, who confirmed the impression by reporting that she had rather deep-seated conflicts in terms of her own sexual identity and, for the time-being, needed her ordinary glasses to protect her from being the "sexual" woman.

Discussion

It is my observation that the attitude among the medical profession towards hypnosis is still an intensely emotional one. Some zealous advocates seem addicted. They repeatedly enroll in seminar courses, enjoy self-hypnosis, and are obviously looking for a quick solution for personal problems. Others become involved with a magical sense of omnipotence because of imagined supernatural power. At the opposite extreme are those who reject hypnosis as dangerous, although—upon questioning—admit that they have never seen an adverse reaction nor have they bothered to review literature. Some even reject hypnosis not only as a valid medical technique but as a scientifically proven psychological phenomenon. More timid colleagues who have had some training in hypnosis are sometimes reluctant to use it for fear of ridicule from their peers. More rarely the other extreme occurs. I know of one Louisiana community where all obstetricians use hypnosis—several under duress—in order to be competitive with their colleagues. In other words, the demands of their patients forced them to learn this technique.

The easiest way to dismiss hypnosis is to say that it is a fad which has occurred periodically since the time of Mesmer. This is a favorite comment of psychiatrists, but it seems to me that there are several factors which make the present interest in hypnosis more than just a fad. There is more acceptance of hypnosis both by the medical profession and laity. There is considerably more

psychodynamic understanding of what hypnosis is than was true in the past. Most important of all, the usefulness of lighter stages of hypnosis is now recognized. It is realized that one need not obtain the deep hypnotic trance or somnambulistic state previously thought desirable. Since so few patients could obtain this deep trance, physicians often became discouraged with what they considered to be their own failure or the limited suggestibility of their patients. It is now claimed that 80 to 90 per cent of the population can obtain at least a light hypnotic state, which is sufficiently deep for most medical purposes.[2] This may seem surprisingly high to the psychiatrist, who is generally working with patients notoriously resistant to hypnosis and whose goals are usually far more complex than those of the general physician. For these reasons, I suspect that the psychiatrist will find hypnosis much less useful in his practice than will the non-psychiatric physician.

It is also recognized that hypnosis is usually a therapeutic adjunct, not definitive therapy. For instance, the value of hypnosis for the anesthesiologist would be quite limited if one had to rely on hypnosis alone for major operative procedures. However, a large percentage of his patients might benefit from light stages of relaxation, concentration and sleep, both preoperatively and postoperatively. The physician's goal for hypnosis then should be a consistently obtainable, although limited and undramatic improvement of the patient's symptoms or an increase in his cooperation.

Apparently my attitude is not a true reflection of the attitudes among psychiatrists in this community. A questionnaire was sent to 118 members of the New Orleans Society of Neurology and Psychiatry. Eighty-five physicians replied. Only 2 of the 85 expressed the idea that hypnosis was not a valid medical procedure. These two physicians felt that it still was in the "experimental" stage. However, over half of the doctors felt that hypnosis should be limited to psychiatrists; and those who believed other physicians could make use of it felt that this should be limited to obtaining muscular relaxation, increased cooperation for medical procedures, or control of pain. This would suggest that the psychiatrists are much more concerned about the complications of hypnosis than is the medical profession, in general.[3, 4] In fact, only three psychiatrists in this community indicated that the nonpsychiatrists should treat patients for symptomatic habits—such as nail-biting, excessive smoking, obesity, or use it for its cathartic effect, or depend on hypnosis for facilitating insight.

To me, this is somewhat surprising, in view of the small number of psychiatrists who have observed deleterious effects from hypnosis. For example, eleven doctors reported 13 instances in which they had observed complications directly related to hypnosis. In four of these instances, experiences with parlor or stage hypnosis were responsible. In 2 other instances, the acute sequelae resulted from hypnotic therapy done by psychiatrists, in one instance, by a dentist, and, in the remainder, by general physicians or specialists. The most serious complication reported was a successful suicide. In this and in one other instance, the complication resulted from command symptom removal, which certainly could have been avoided if the treating physicians had the most rudimentary knowledge of proper hypnotic technique. In 6 other instances, acute psychotic reactions resulted, although it was reported that these were severely predisposed individuals. The other instances were not serious complications but minor depressions, anxieties, dependencies, or erotic attachments to the hypnotherapists, which occur in any doctor-patient setting.

When one considers that at least 100 local physicians and dentists are using hypnosis in their practices, it would seem that the complications are relatively infrequent and that these complications

could have been avoided if the individual had had proper training in the use of a permissive technique or was able to recognize early psychosis. To me, this emphasizes the need for establishing training programs in medical hypnosis with continued clinical supervision and suggests that the psychiatrist must take an active lead in establishing and staffing such training programs.

From my own observations, working with two students on a research project on the hypnotic control of intractable pain due to cancer, it seemed that the effective element was the intense doctor-patient relationship rather than the depth of hypnosis. Some patients would get dramatic relief with the very light stages of hypnosis, while others obtained no relief, even if they could obtain a somnambulistic trance. It seems that understanding the doctor-patient relationship is crucial for the effective use of hypnosis in the control of this pain. Again, this would emphasize the important role the psychiatrist must play in the teaching of medical hypnosis.

One other advantage I foresee from my experience with the experimental course in medical hypnosis already alluded to is that such teaching provides increased rapport between the psychiatrists and other specialists. We have an opportunity to sit down and talk with these specialists about the character structure of the patient and the dynamics of the doctor-patient relationship. The specialists are willing to do this because hypnotic therapy offers an immediate, palpable aid to them in the care of their patients. The psychiatrist becomes more than just a dumping ground for uncooperative or psychotic patients.

It must be clear by now that I think the psychiatrists should be less reluctant in encouraging medical hypnosis and more aware of the possible dangers if we do not actively participate in teaching general physicians and nonpsychiatric specialists the indications and contraindications of hypnotherapy, while emphasizing that it is an adjunctive treatment within their fields of competence.

References

1. Report on Medical Use of Hypnosis. Council on Mental Health, American Medical Association, J.A.M.A., 168:186-189 (Sept. 13, 1958).

2. Syllabus Seminars on Hypnosis, 1 North Crawford Avenue, Chicago 24, Illinois.

3. Rosen, Harold. "Hypnosis and Self-Hypnosis in Medical Practice." Maryland State Medical Journal, 6:297-299 (June) 1957.

4. Rosen, Harold. Hypnosis, Mental Hygiene, and the Dentist-Hypnotist." Journal of Clinical and Experimental Hypnosis, 5:101-131 (July) 1957.

HISTORICAL NOTES

In all ages of the world the conquerors and leaders in civilization have been nations of mixed blood. Unquestionably the most aggressive and progressive race now existing is the mixed race known as the Anglo-Saxon. The people of these states, not yet brought to a condition of fusion, and therefore not yet having acquired a distinct national character, which belongs only to a homogeneous people have, in various ways and on various occasions, asserted their progressive tendencies, and have a religious faith in that most aggressive of all doctrines, "Manifest Destiny."

Herrick, S.S.: Marriage of Consanguinity, New Orleans M. & S. J. 19:50 (July) 1866.

The Journal of the Louisiana State Medical Society

Established 1844

Published by The Journal of the Louisiana State Medical Society, Inc. under the jurisdiction of the following named Journal Committee:

W. Robyn Hardy, M. D., Ex-Officio
E. L. Leckert, M. D., Chairman
C. M. Horton, M. D., Vice-Chairman
Sam Hobson, M. D., Secretary
Edwin H. Lawson, M. D.
J. E. Knighton, M. D.

EDITORIAL STAFF

PHILIP H. JONES, M. D., Editor

COLLABORATORS—COUNCILORS

Felix A. Planche, M. D.
J. E. Clayton, M. D.
Guy R. Jones, M. D.
C. E. Boyd, M. D.
Henson S. Coon, M. D.
John L. Beven, M. D.
J. Y. Garber, M. D.
R. E. C. Miller, M. D.

C. GRENES COLE, M. D., General Manager
1430 Tulane Avenue

Subscription Terms: $4.00 per year in advance, postage paid, for the United States; $5.00 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

Manuscripts should be addressed to the Editor, 1430 Tu ane Ave., New Orleans, La.

The Journal does not hold itself responsible for statements made by any contributor.

Editorial

Socialized Medicine in Europe

Creeping socialism continues to threaten this country. As a part of the socialist program, socialized medicine, or state medicine, or compulsory health insurance, or compulsory sickness insurance, all meaning the same thing, have been repeatedly presented to Congress. After a succession of failures to have the whole plan accepted by the nation, small increments of the plan have been presented and enacted, in spite of the informative and forceful opposition of organized medicine.

One such plan is presently before the Congress, known as the Forand bill (HR 4700). Opposition to this bill on the part of the nation's physicians has become widespread and gives the prospect of being effective. Those who advocate the bill have pointed to the success—so-called—of socialized medicine in various forms in Europe.

Although there are many institutions, laws, and customs which are acceptable there, and apparently satisfactory in various countries, it is by no means to be assumed that the same would be desirable or acceptable here. In the last several years there has been a reported threat of the socialized Austrian, German, French, and British doctors to go on strike. It is further stated that the Italian physicians actually did strike. This could be interpreted as an indication that at least from the monetary standpoint socialized medicine in the several countries mentioned is not entirely satisfactory economically.

In England, a modified form of socialized medicine began a half century ago and came into full expression in 1948. The result, as indicated by numerous reports and surveys, has been one which makes proper appraisal difficult. It is agreed that the cost the first year was two and a half times the original estimate, and is now about six times the estimate. The startling increase is partly the result of inflation, but principally, because of greater demands upon the use of the National Health Service than were anticipated. Observers report that although no increase in the hospital beds has been provided and that while emergencies are cared for in the hospitals, elective cases may wait months or two years before admission. Physicians in their offices must see fifty to one hundred patients a day; the allotment of time to

each may be as little as three minutes. A large part of the time of the general practitioner is consumed as a distributor of patients, directing them to special services, specialists in hospitals, and consideration of trivialities. The general practitioner loses contact with the patient during the time he is under the care of the specialist consultant or in the hospital.

The physicians practice under certain limitations and the State, after consultations with appropriate committees, reserves the right to direct the physician in various fields. The general practitioners are paid a fixed capitation fee per patient per year. Since 1952, the maximum number of patients a family doctor in Britain can carry on his panel is 3500, for which he receives an average of $2.73 per patient a year. Specialists are attached to hospitals and paid a salary. Various observers have stated that if the quality of service has not greatly deteriorated as yet it is because the years of strain and stress which have passed could not change the standards of the profession.

Government medicine in France follows a different pattern. Hospitalization is provided in government hospitals, and most of the hospitals in France are of that type. Physicians are paid by the patient on a fee for service basis. The government provides 80 per cent of the cost of prescriptions and 80 per cent of an established fee schedule for physicians and dentists. The physicians have refused to accept a fee schedule, and the physician's fee may be more than the government schedule. A patient can secure from the government only 80 per cent of the fee allowed by the government. The onus of the difference of what is allowed and what is charged falls on the physician, and may prejudice the patient against him.

Rigid control of the price of drugs and of the cost of hospital administration has a restrictive effect on activities in their respective fields. It is stated that public hospitals in France are inadequately staffed, and by American standards give a meagre type of care.

In Germany, in 1875, Bismarck established a government insurance company to take care of low paid working classes and their families. At present, 86 per cent of the population are members of this government insurance company. Approximately 10 per cent are privately insured, and 4 per cent are not insured at all. An individual under this system needing medical care gets a sick slip from his employer, takes it to a physician of his choice, and the physician has the obligation, if he is on the accepted list of the government insurance company, of caring for this patient for three months for $3.50. In the event that hospitalization becomes necessary a certificate is furnished the patient and he finds his own way of acceptance into one of the government hospitals. It is commented that this system in its operation brings about a deterioration in morale of patients, who look upon the physician as an employee and he is regarded, for practical purposes, as being under the direction of the insurance company. The physician is a harrassed man and is under the necessity of making free house calls and seeing crowds of patients daily. He practices under directives as to the type of medication to be used, the number of tests which can be ordered, and is subject to deductions from his stipend for minor infractions of rules.

These systems of socialized medicine have grown up over a matter of decades. The undesirable features observed in their operation are not there by chance. They all alter radically the patient-physician relationship. They supply a great quantity of medical service to the mass of the people. The physician has the obligation to supply an unlimited service for a limited compensation. The expected result is that the quality of service will progressively deteriorate. The evidence indicates that this is slowly occurring. The fact that it has not progressed rapidly is greatly to the credit of the professional standards in the areas discussed.

It is the considered opinion of the physicians in this country that socialized medicine, as it operates in Europe, would be unsatisfactory here.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

W. ROBYN HARDY, M. D.
President
1959 - 1960

Dr. W. Robyn Hardy, our President for the past year, has been quite active in attending district and parish society meetings and has always given these groups good wholesome advice and has created good fellowship among their members. He has, at all times, had the interest of the Society and its members uppermost in his mind and his actions and decisions were always in the best interest of Organized Medicine.

Dr. Hardy has participated in many national conferences and AMA meetings and has been active in creating good public relations in all places visited.

Dr. W. Robyn Hardy was born in Pineapple, Alabama in 1899.

He received his early education in the Alabama public school system and attended the University of Alabama where he was a member of the Student Army Training Corps during World War I.

Dr. Hardy was married in 1923 to Miss Louise Shehee of Union Springs, Alabama. One child was born to this union, Dr. W. Robyn Hardy, Jr., who is a practicing physician in New Orleans specializing in Radiology.

He received his Bachelor of Science degree from Tulane University and was graduated from the Tulane University School of Medicine in 1929.

His internship was performed at Southern Baptist Hospital in New Orleans.

Dr. Hardy has practiced in New Orleans throughout his professional career in medicine and surgery.

During World War II, he was assigned to the 45th Evacuation Hospital of the First Army and held the rank of Lieutenant colonel in the Army Medical Corps.

He is a member of the staff of Southern Baptist Hospital and is also past president and past chairman of the executive committee of that hospital.

He is senior visiting surgeon at Charity Hospital of Louisiana in New Orleans.

Dr. Hardy is a member of the Orleans Parish Medical Society, the Louisiana State Medical Society, the American Medical Association, the American College of Surgeons, the American Board of Abdominal Surgery, the Surgical Association of Louisiana and Alpha Omega Alpha honorary medical fraternity.

We heartily congratulate Dr. Hardy in conducting the affairs of the Society in a most efficient manner and sincerely thank him for his loyal services to the Society.

ANNUAL MEETING
CAPITOL HOUSE, BATON ROUGE
MAY 2-4, 1960

The opening session of the Society's 80th annual meeting will be held at 8 p.m. in the Civic, University, and Industrial Rooms of the Capitol House on Monday, May 2. The guest speaker of the evening will be Dr. F. J. L. Blasingame, Chicago, Executive Vice-President of the AMA who will speak on "American Medicine—Today and Tomorrow." At the opening meeting, doctors who have completed 50 years of practice will be given special recognition and admitted to the "50-Year Doctors Club."

Registration for the House of Delegates will begin at 8 a.m. on Monday, May 2, in the Grand Ballroom. The first session of the House will be at 9 a.m. in the Civic Room followed by a luncheon in the University and Industrial Rooms. Delegates will meet again at 2 p.m. in the Civic Room. The final meeting of the House of Delegates will be held at 9:30 a.m. on May 4 in the Industrial Room.

In addition to Dr. Blasingame, guest speakers will be Dr. Temple Ainsworth, Jackson, Miss., Professor of Urology, University of Mississippi Medical School; Dr. George L. Jordan, Houston, Tex., Chief of the Surgical Service of the Veterans Administration Hospital; Dr. Robert D. Moreton, Fort Worth, Tex., member of the executive committee of the American College of Radiology, and Dr. John H. Moyer, Philadelphia, Pa., Chairman of the Department of Internal Medicine, Hahnemann Medical College and Hospital.

Information regarding meeting places of the scientific sessions will be found in the program. All meeting rooms are on the ground floor of the Capitol House.

Scientific and technical exhibits will be in the Grand Ballroom. Members are urged to visit these exhibits as often as possible and to register with the technical exhibitors. The Society would not be able to conduct its annual meetings without the financial assistance it receives from the technical exhibitors. To show appreciation for this assistance, please register with each exhibitor.

The dinner dance will be held in the Grand Ballroom at 8:30 p.m. on Wednesday, May 4. Active members of the Society are entitled to two tickets for the dinner dance. Additional tickets for guests may be purchased at the registration desk.

The Annual State Medical Society Golf Tournament will be held on May 2 and 3 at the Sherwood Forest Country Club. All doctors interested in playing are asked to bring a certified handicap from their home Professional. Each entrant will be responsible for his daily caddy and green fee. Prizes will be presented at the conclusion of the tournament.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

THE 109TH ANNUAL A.M.A. MEETING: A FORUM FOR 2,000 TOP MEDICAL MEN

The 109th annual meeting of the American Medical Association will be a forum presented by some of the nation's top scientific brains.

Approximately 2,000 physicians, all outstanding in their field, will participate in presenting the scientific program of the meeting to be held in Miami Beach, June 13-17.

There will be two general scientific meetings in the Grand Ballroom of the Fontainebleau Hotel, and other lectures, symposiums, and panel discussions in the Fontainebleau, Eden Roc Hotel, and in the new, airconditioned Miami Beach Exhibition Hall. Sessions on dermatology, being held jointly with the Society for Investigative

Dermatology, will be in the di Lido Hotel.

The opening general scientific meeting, Monday afternoon, June 13, will begin with the Joseph Goldberger Lecture on Clinical Nutrition. Dr. Carl A. Lincke, chairman of the A.M.A. Council on Scientific Assembly, will preside at this meeting.

About 290 exhibits will be on display in the Miami Beach Exhibition Hall, representing the most outstanding exhibits selected from 540 applications.

A new special exhibit on Body Fluid Disturbances, offering a complete course in body fluids, will be presented in its entirety on two days. Different aspects will begin at specific times to permit physicians to attend only those parts in which they are particularly interested.

A special exhibit on fractures will include booths on fractures of the ankle, hip, wrist, tibia and fibula, children's fractures, and fractures resulting from falls on the outstretched hand. About 50 prominent orthopedic surgeons will take part in the demonstrations ot this exhibit.

Specials on Pulmonary Function and Fresh Tissue Pathology also will be highlighted in the Scientific Exhibition area.

An outstanding program of motion pictures and television, which will be coordinated with the rest of the scientific program, will be presented also in Miami Beach Exhibition Hall.

MEMORIAL MASS

A memorial mass for deceased members of the Society will be offered Tuesday evening, May 3, at 5:30 P.M. at St. Joseph's Catholic Church, corner of Fourth and Main Streets, Baton Rouge. All members and their families are cordially invited to attend. This service honoring our departed colleagues is sponsored by the Louisiana Federation of Catholic Physicians' Guilds.

REVIEWS OF MEDICAL MOTION PICTURES

The 11th annual publication of REVIEWS OF MEDICAL MOTION PICTURES is now available on request from the Film Library of the A.M.A. This publication is prepared by the Division of Communications, Department of Medical Motion Pictures and Television and contains reprints of all reviews published in the Journal A.M.A. during 1959.

COURSE IN FITTING CONTACT LENSES

The University of Texas Postgraduate School of Medicine announces a course in theory and practical fitting of contact lenses, to be held in Houston, Texas on May 23, 24, 25 and 26, 1960.

The instructors for this course will be ophthalmologists who are experienced in the fitting of contact lenses. This course is designed so that those completing it will be proficient in all phases of contact lens fitting and adjusting. The course is limited to 20 physicians certified by the American Board of Ophthalmology.

For further information write: Office of the Dean, The University of Texas Postgraduate School of Medicine, 410 Jesse Jones Library Building, Texas Medical Center, Houston 25, Texas.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

Applications for certification in the American Board of Obstetrics and Gynecology, new and reopened, Part 1, and requests for re-examination in Part 11 are now being accepted. All candidates are urged to make such application at the earliest possible date. Deadline for receipt of applications is August 1, 1960. No applications can be accepted after that date.

Candidates are requested to write to the office of the Secretary, 2105 Adelbert Road, Cleveland 6, Ohio, for a current Bulletin if they have not done so in order that they might be well informed as to the present requirements. Application fee ($35.00), photographs, and lists of hospital admissions must accompany all applications.

As announced in the current Bulletin, "after July 1, 1962, this Board will require a minimum of three (3) years of approved progressive Residency Training to fulfill the requirements for admission to examination. After the above date, training by Preceptorship will no longer be acceptable. Therefore the initiation of Preceptorships will not be approved after July 1, 1960."

NATIONAL CONFERENCE ON RURAL HEALTH OF THE AMERICAN MEDICAL ASSOCIATION

This Conference represents an era which actually started with the first conference which was held in Chicago in 1946. Mrs. Charles Sewell, with the cooperation of Dr. F. S. Crockett, both of Indiana, had asked the Board of Trustees of the American Medical Association in 1945 to help in solving some of the health problems of rural people.

The Louisiana State Medical Society, through its Rural and Urban Health Committee, was represented by three of its members at that first meeting in the Palmer House in Chicago in February 1946 and has continued active in subsequent conferences. Dr. M. C. Wiginton of Hammond, Louisiana, who lost his life in a drowning accident in Florida on November 25, 1959, attended thirteen of the conferences. Dr. Guy R. Jones of Lockport, the original Chairman and now Vice-Chairman of the Committee on Rural and Urban Health, attended a total of twelve meetings. The Chairman has attended all except two meetings.

At the last meeting of the Rural Health Council of the American Medical Association, it was

agreed that the Council had served its objective, and that national meetings should be replaced with regional meetings. In 1961 there will be two regional meetings—one in Atlanta and the other in Denver.

The theme of this, the 15th National Conference, was: "Meeting Challenges with responsibility." It covered such general areas as "Choosing A Career in the Field of Medicine"—Medicine, Dentistry, Nursing, Medical Technology, Veterinary Medicine, and others. The effect of diet and nutrition on health, what is good growth, and the age-old subject of our aging population, were also subjects of discussion.

While the attendance was not up to par, the people were enthusiastic as ever, and everyone agreed that we wanted no more of Socialized Medicine, not even the Forand Bill.

J. P. Sanders, M. D., Chairman
Committee on Rural and Urban Health
Louisiana State Medical Society

BOOK REVIEWS

Synopsis of Gastroenterology; by Rudolph Schinder, M. D. New York, 1957, Grune & Stratton, pp. 395, Price $7.75.

This book attempts to correlate gastrointestinal lesions with symptoms connected with other organ systems and discusses the general etiology and symptomatology of gastrointestinal disorders. It includes some very basic material on gastrointestinal examination particularly with respect to diseases of the mouth, pharynx, salivary glands, esophagus, stomach and duodenum, in addition to other lesions of the solid and hollow viscera of the abdominal cavity. This treatise makes good reading for ready reference.

CHARLES C. ABBOTT, M. D.

A History of Neurology; by Walter Riese, MD Publications, New York, 1959.

Riese's *History of Neurology* is a fascinating idea sadly come to grief. The author has hit on the intriguing scheme of depicting the development of neurology throughout Western history by tracing the evolution of some of its major concepts (nervous impulse, reflex action, cerebral localization, etc.). Unfortunately, the execution is so turgid, so weighted down with reference after reference poorly strung together, that one has a terrible time following the author's stream of thought and tends to be frustatingly at sea by the end of each chapter. The book ends with a very nice chronological table of prominent neurologists and their contributions set against the historical background in which they lived.

GERHARD HERMANN FROMM, M. D.

The Principles and Methods of Physical Diagnosis; by Simon S. Leopold, M. D., 2d ed., Philadelphia, Pa., W. B. Saunders Company, 1957, 537 pp., Price $9.00.

The author's aim is to provide a textbook which stresses the underlying principles of physical examination and the correlation of abnormal findings with disease processes. The book is designed as a supplement to clinical instruction and will be of primary interest to the undergraduate medical student and his teachers. There are chapters on history taking, psychiatric evaluation, collection of general data, and the pediatric examination. The other chapters survey the various parts of the body with a description of methods of examination, definition of appropriate terminology and correlation with pathological conditions. There are included helpful clinical hints for facilitating diagnosis, such as four ways to palpate a spleen, and timing of living pulsations. Leopold includes material from other sources as well as his own experience and several chapters are written by guest authors (gynecology, neurology, etc.). There is a special chapter on acoustic principles in chest auscultation by S. Reid Warren.

This second edition differs from the first primarily in the greater emphasis given history taking and in expansion of the material generally, including a chapter on pediatric examination.

JEANNE HORAN, M. D.

PUBLICATIONS RECEIVED

Doubleday & Co., Inc., Garden City, N. Y.: A Traveler's Guide to Good Health, by Colter Rule, M. D.

Grune & Stratton, Inc., N. Y.: Cardiac Auscultation, by J. Scott Butterworth, M. D., Maurice R. Chassin, M. D., Robert McGrath, M. D., and Edmund H. Reppert, M. D. (2nd edit.).

Office of the Surgeon General, Department of the Army, Washington, D. C.: Surgery in World War II, Neurosurgery, Volume II, by R. Glen Spurling, M. D., and Barnes Woodhall, M. D.

W. B. Saunders Co., Phila.: Anatomy, by Ernest Gardner, M. D., Donald J. Gray, Ph. D., and Ronan O'Rahilly, M. Sc., M. D.

Charles C Thomas, Publisher, Springfield, Ill.: Atlas of Anatomy and Surgical Approaches in Orthopaedic Surgery—Upper Extremity, by Rodolfo Cosentino, M. D.